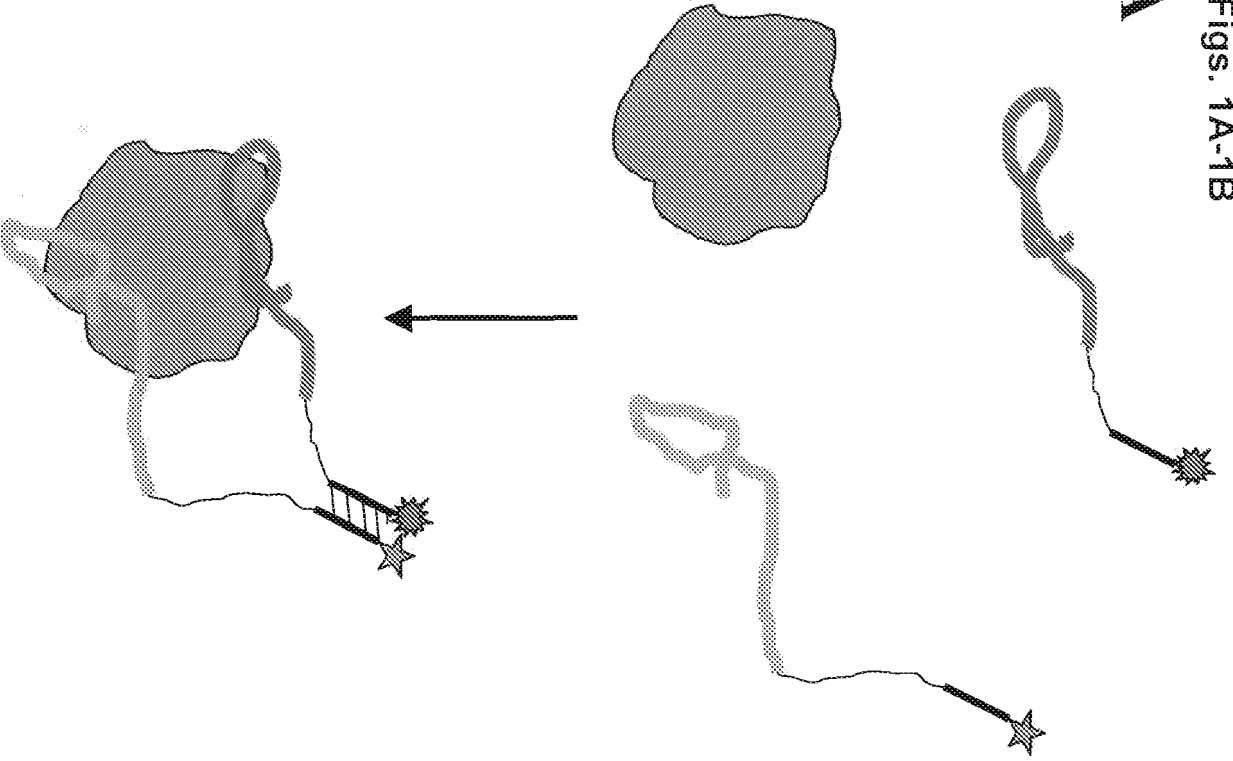
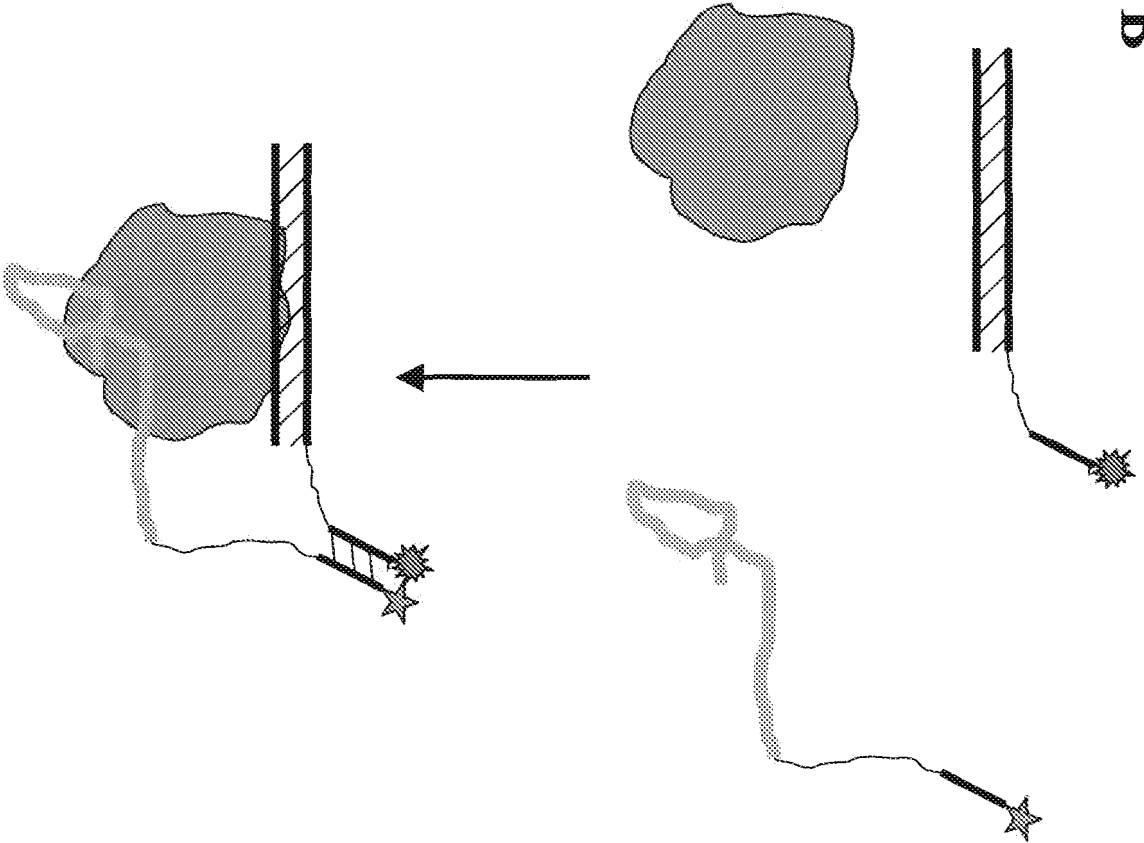


Figs. 1A-1B

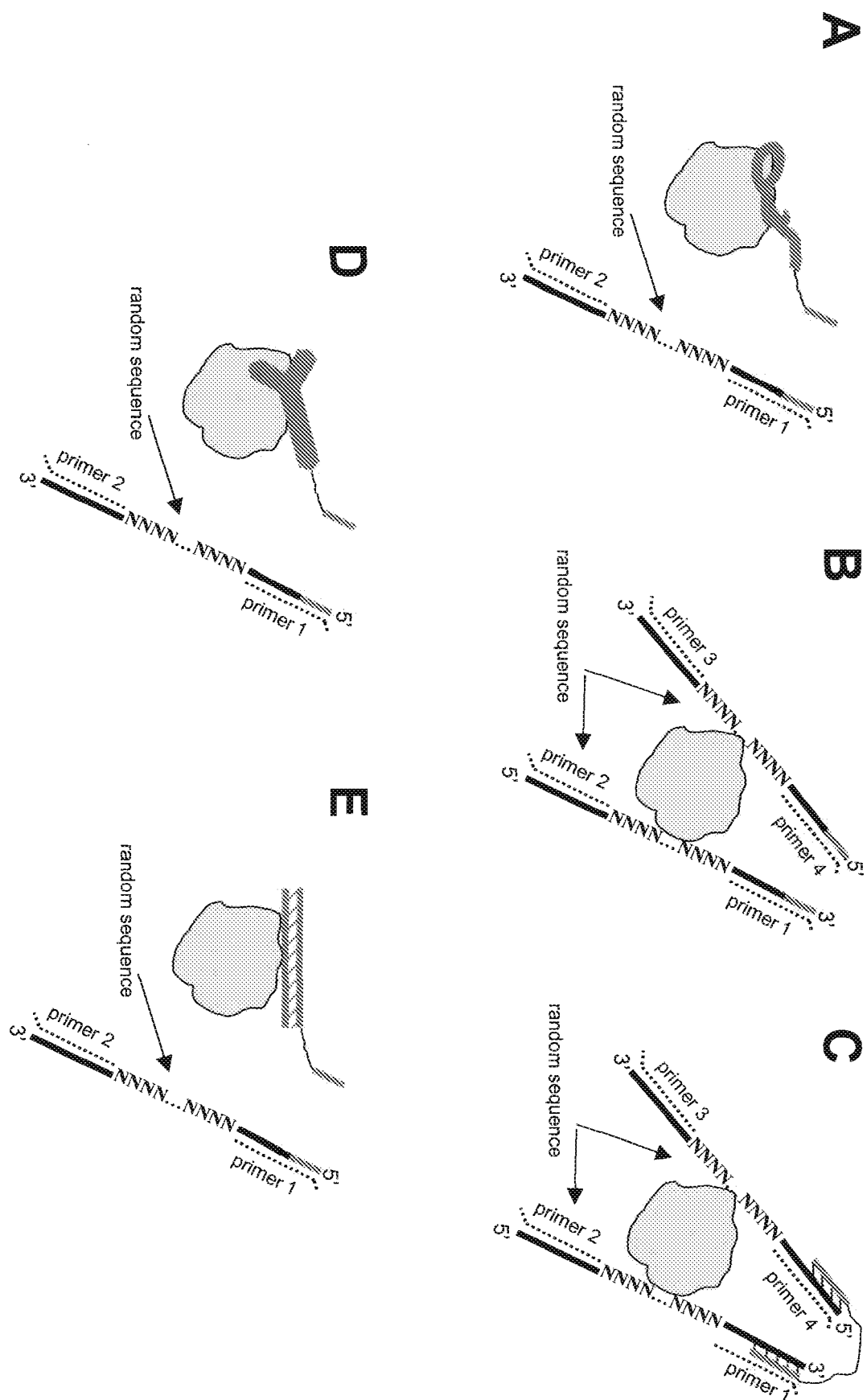
A



B

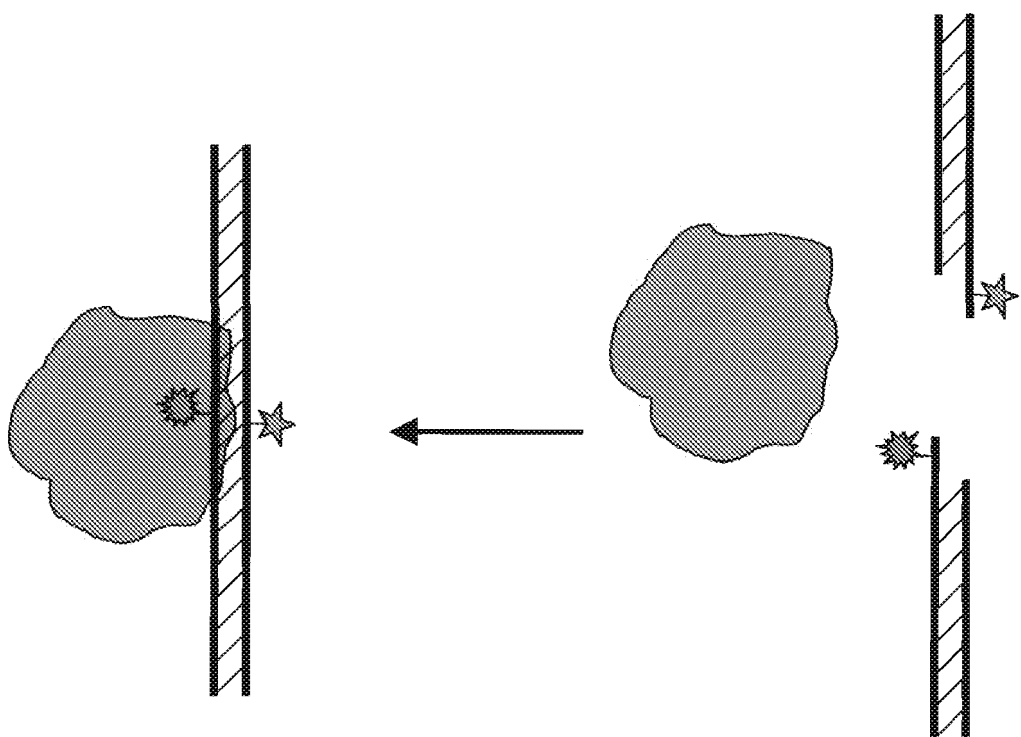


Figs. 2A-2E



Figs. 3A-3B

A



B

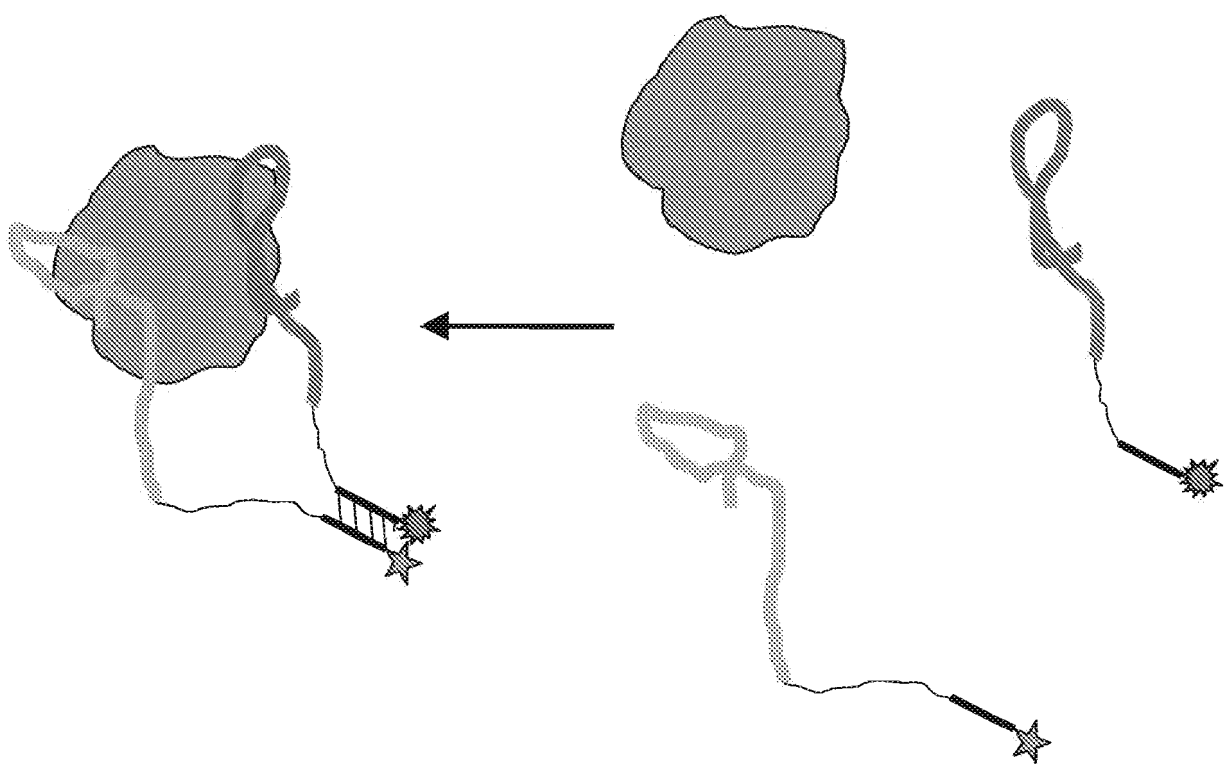
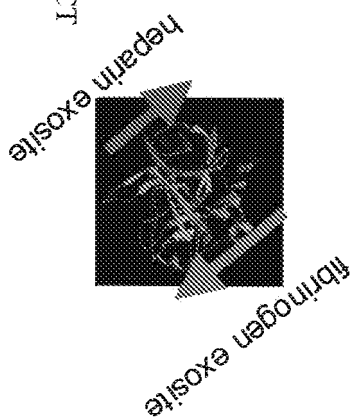


Fig. 4

60-18 [29]

G15D



THR1

5' Fluorescein AGT CCG TGG TAG GGC AGG TTG GGG TGA CT



THR2

5' Fluorescein GGT TGG TGT GGT TGG



THR3

AGT CCG TGG TAG GGC AGG TTG GGG TGA CT



THR4

GGT TGG TGT GGT TGG



THR5

AGT CCG TGG TAG GGC AGG TTG GGG TGA CTX XXX XGG TTG GTG TGG TTG G



THR6

AGT CCG TGG TAG GGC AGG TTG GGG TGA CTX XXX XXX GGT TGG TGT GGT TGG

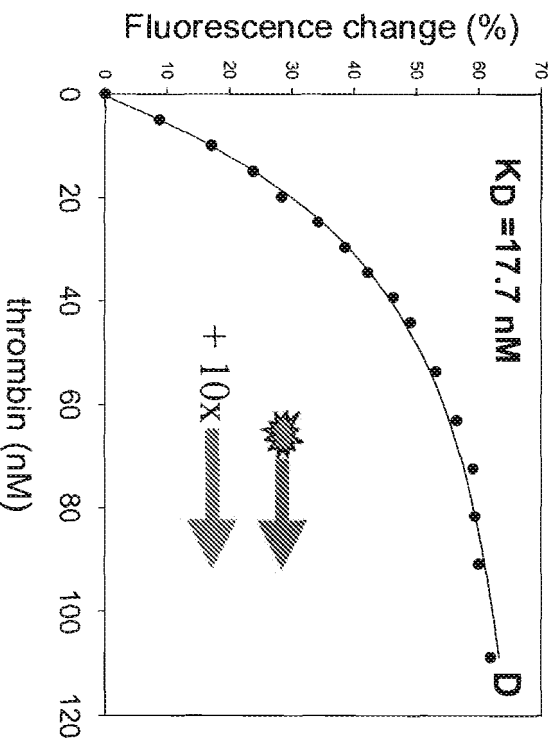
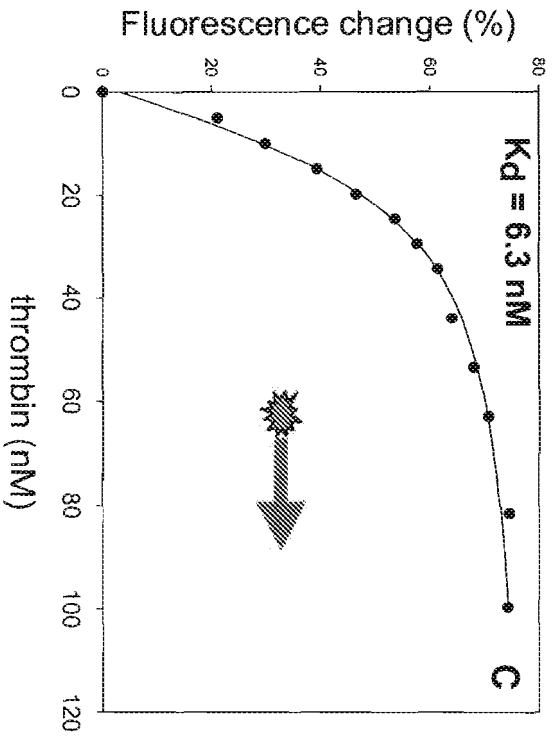
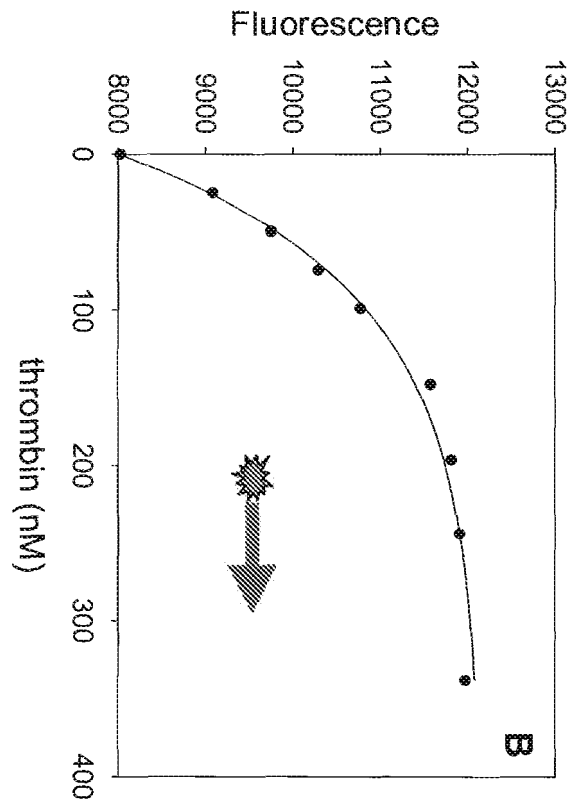
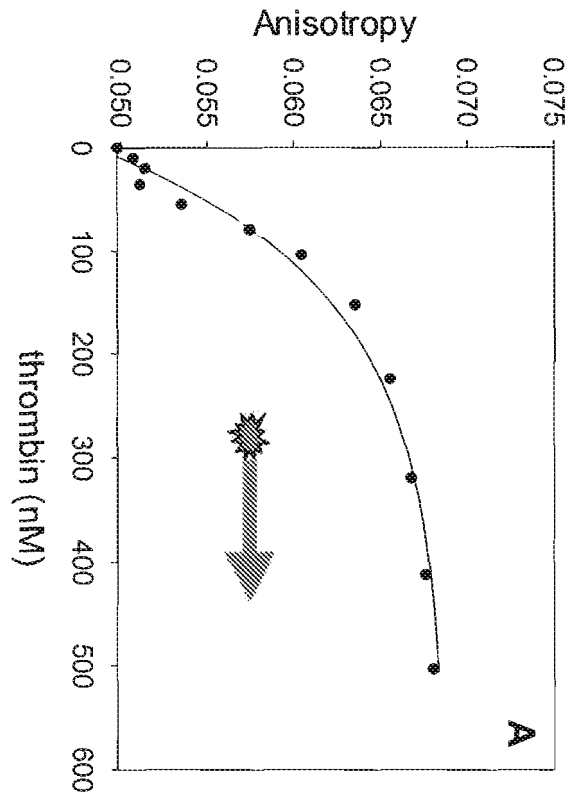


THR7

GGT TGG TGT GGT TGG XXX XXX XAG TCC GTG GTA GGG CAG GTT GGG GTG ACT

X = Spacer 18

Figs. 5A-5D



Figs. 6A-6D

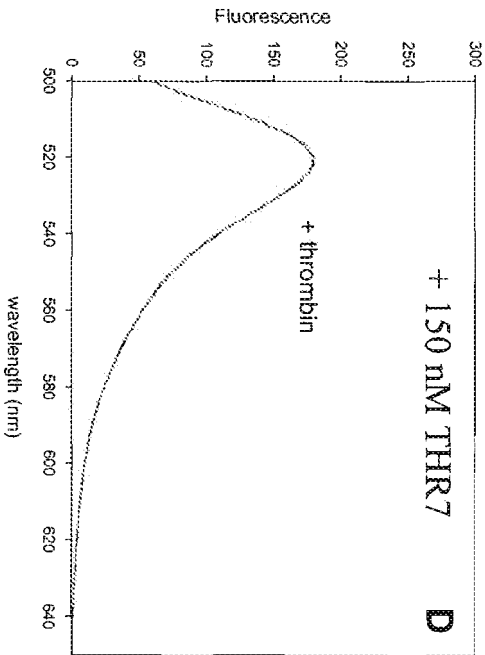
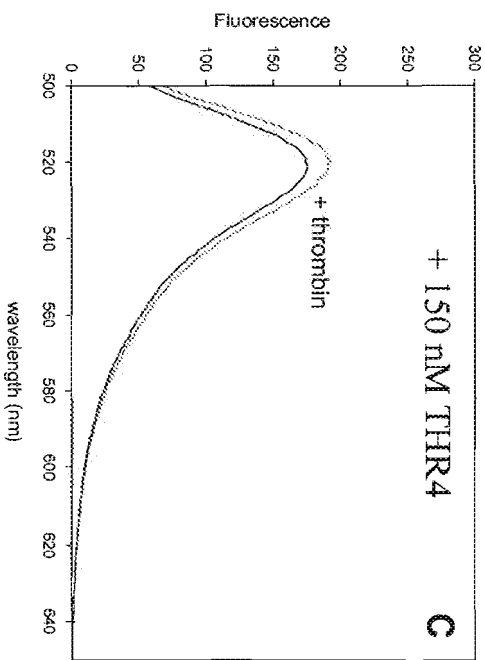
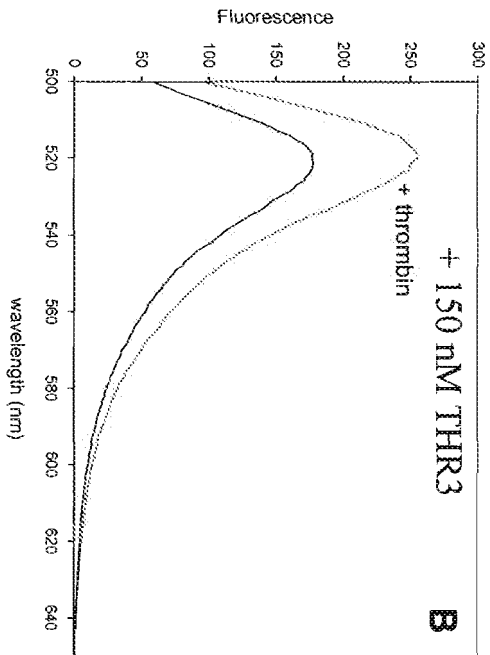
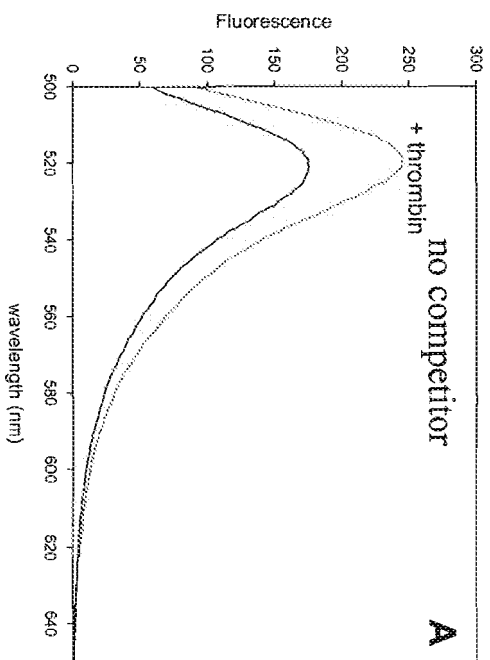
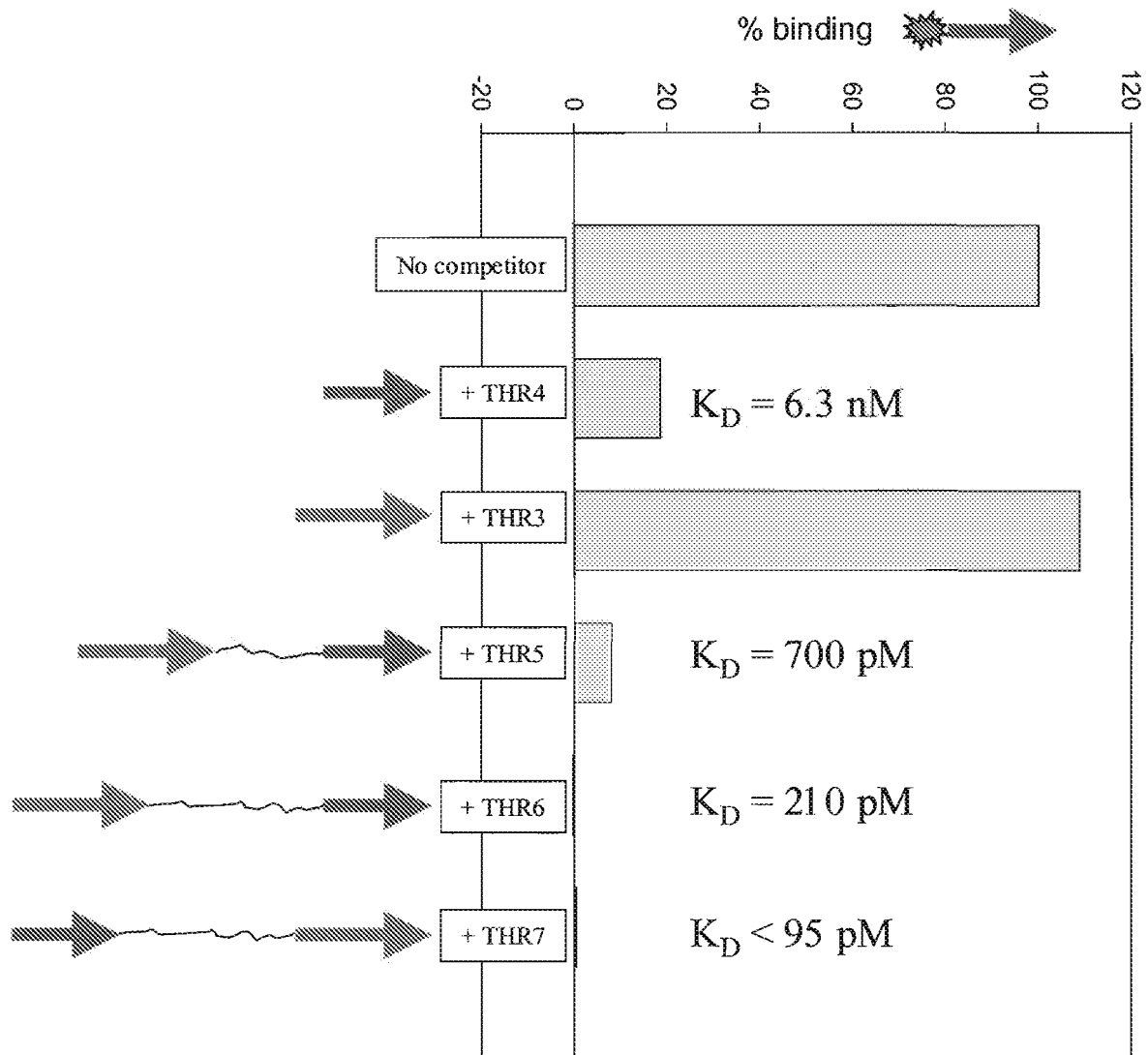
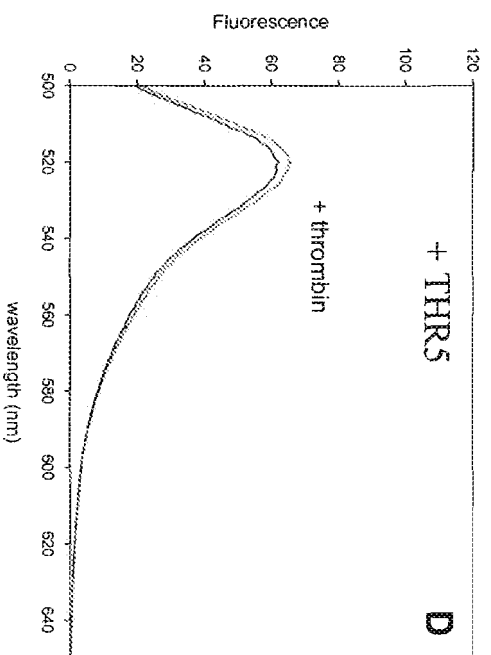
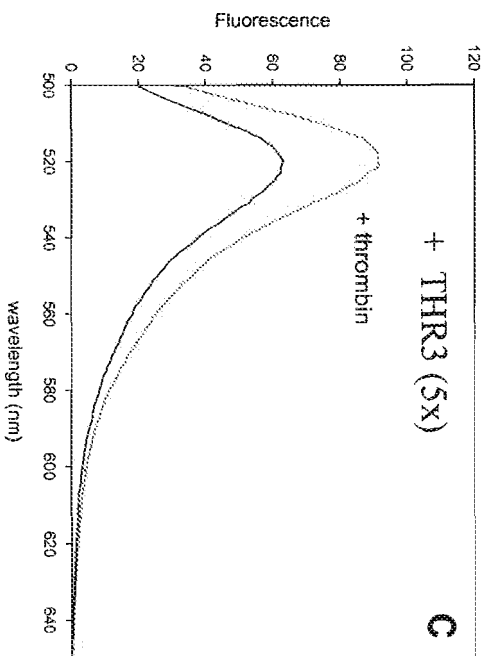
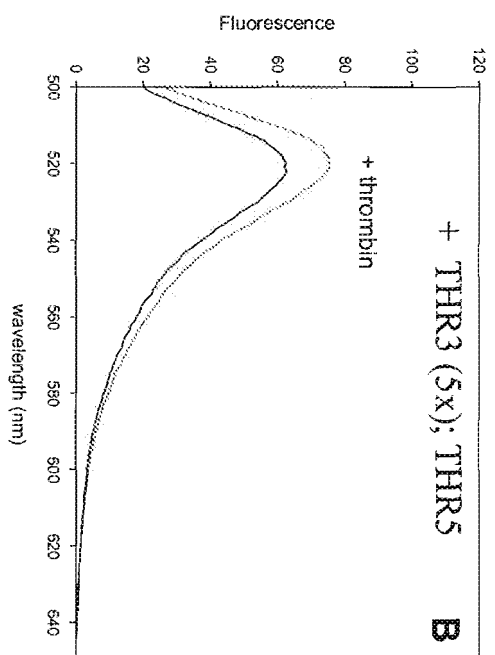
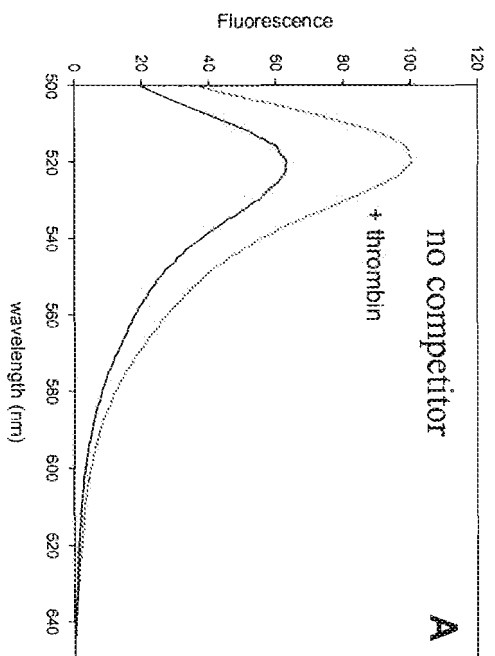


Fig. 7



Figs. 8A-8D



Figs. 9A-9B

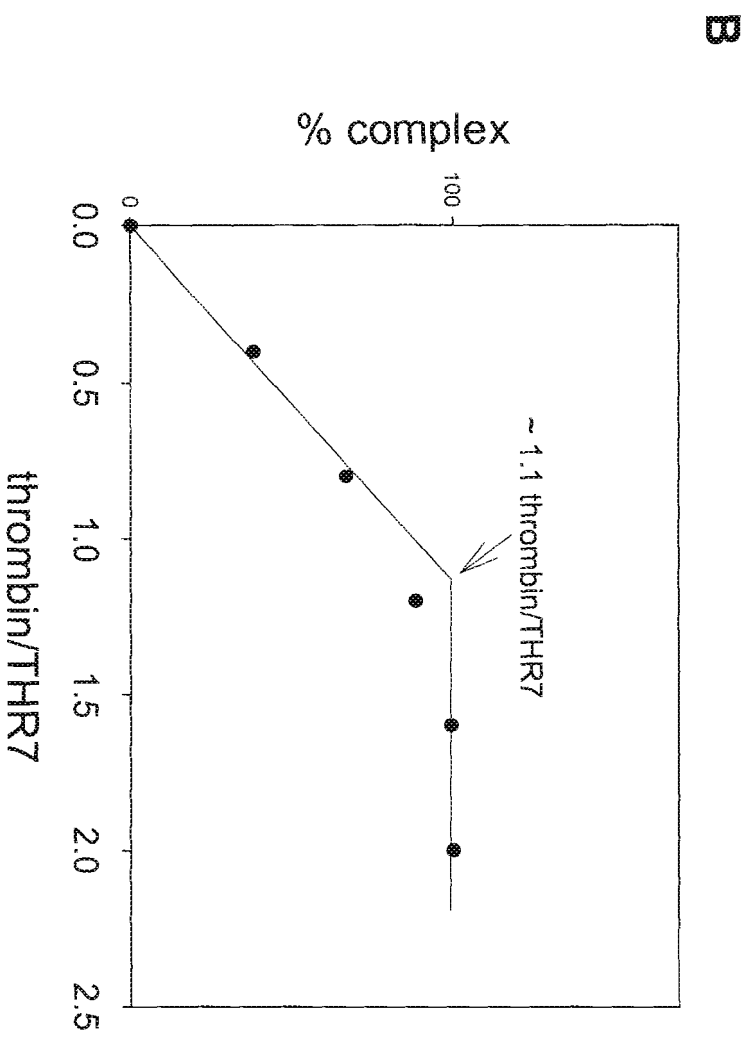
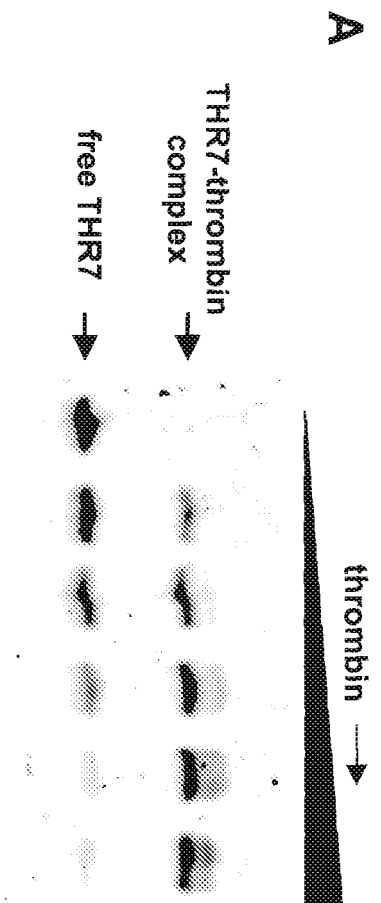
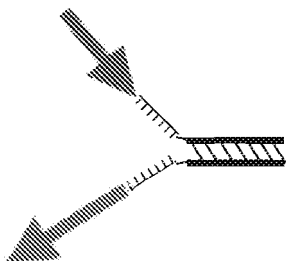


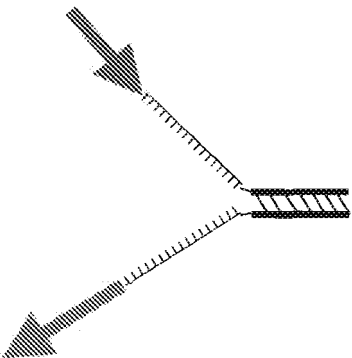
Fig.10

60-18 [29]

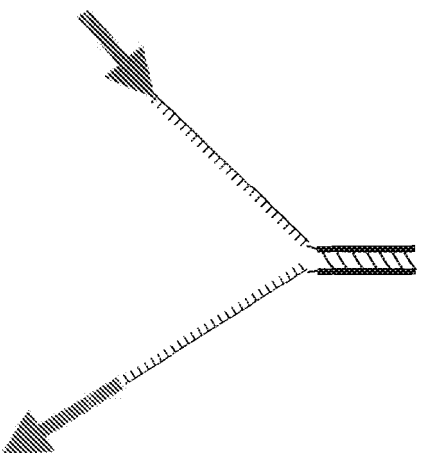
G15D



THR14
GGT TGG TGT GGT TGG TTT TTT T CTG TCG TTA GTG AAG GTT
THR15
AAC CTT CAC TAA CGA CAG TTT TTT T AGT CCG TGG TAG GGC
AGG TTG GGG TGA CT

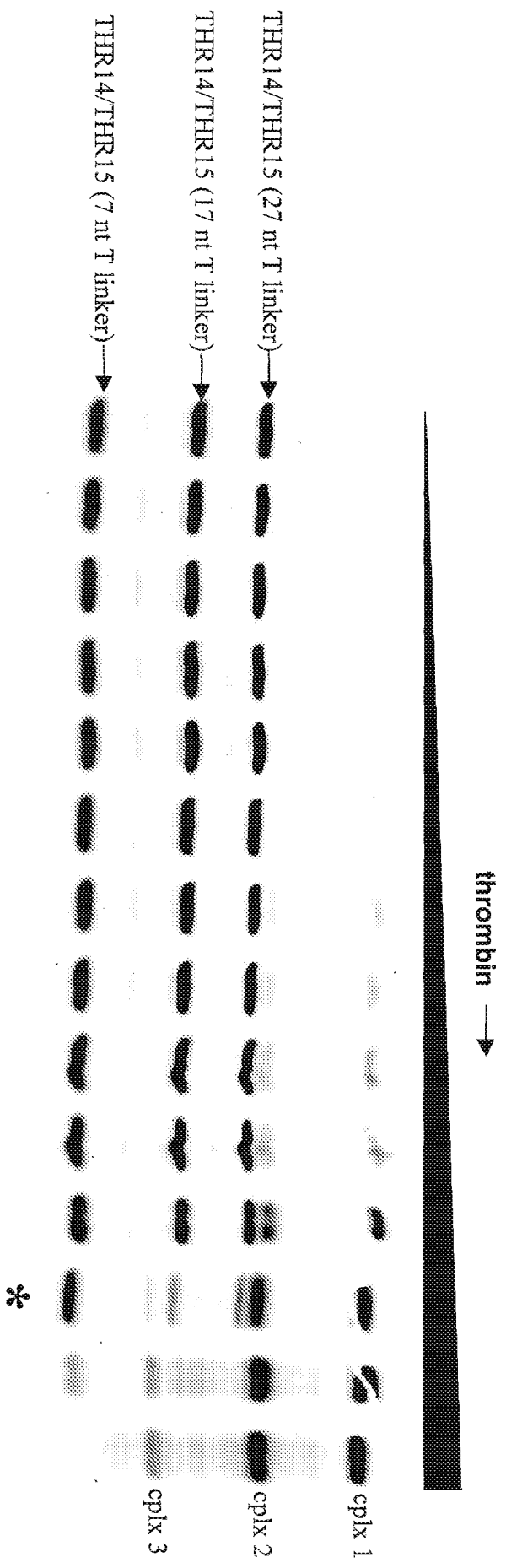


THR16
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TT CTG TCG TTA GTG
AAG GTT
THR17
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TT AGT CCG TGG
TAG GGC AGG TTG GGG TGA CT

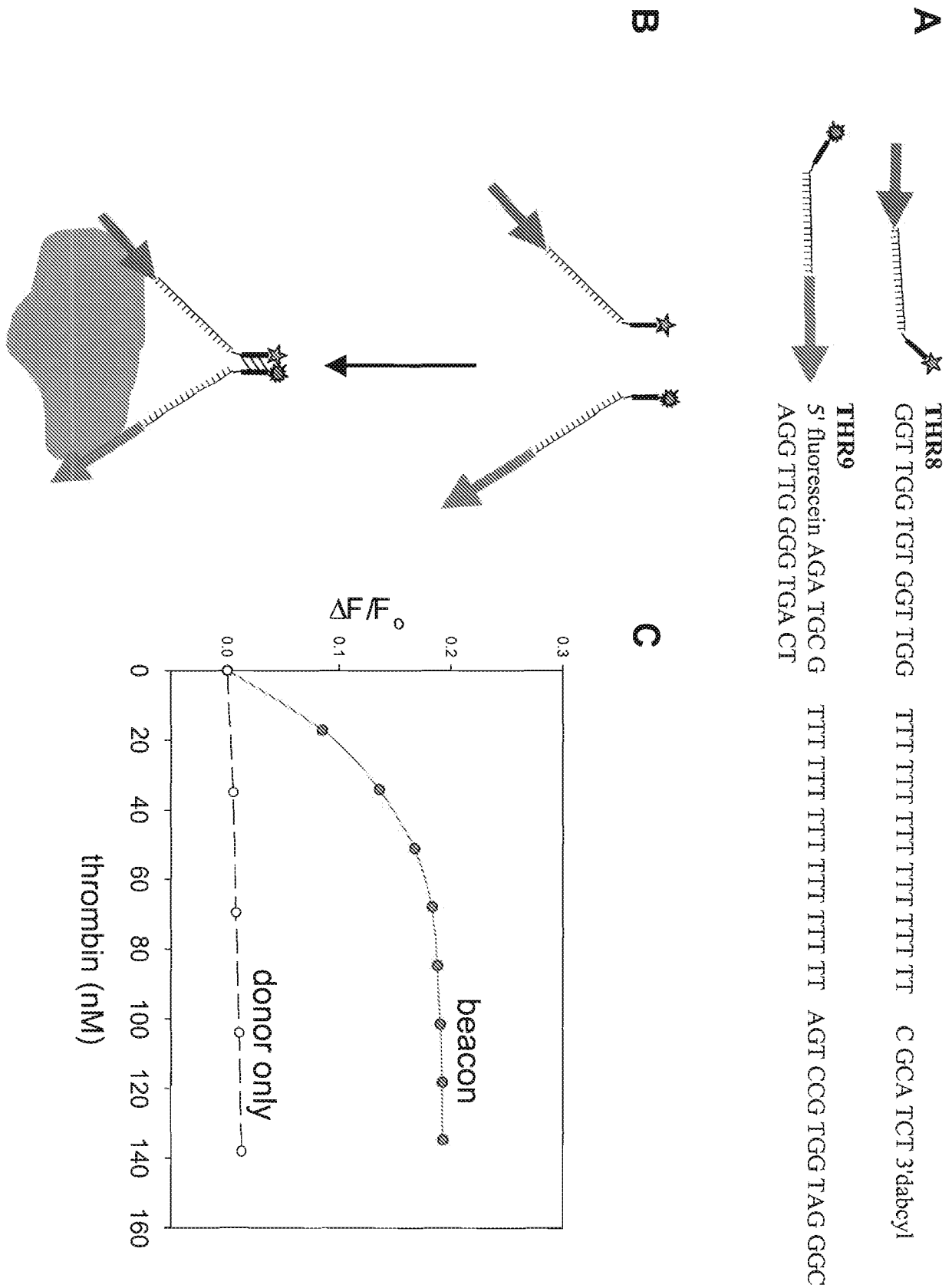


THR18
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TTT TTT CTG TCG
TTA GTG AAG GTT
THR19
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TTT TTT AGT
CCG TGG TAG GGC AGG TTG GGG TGA CT

Fig. 11



Figs. 12A-12C



Figs. 13A-13C

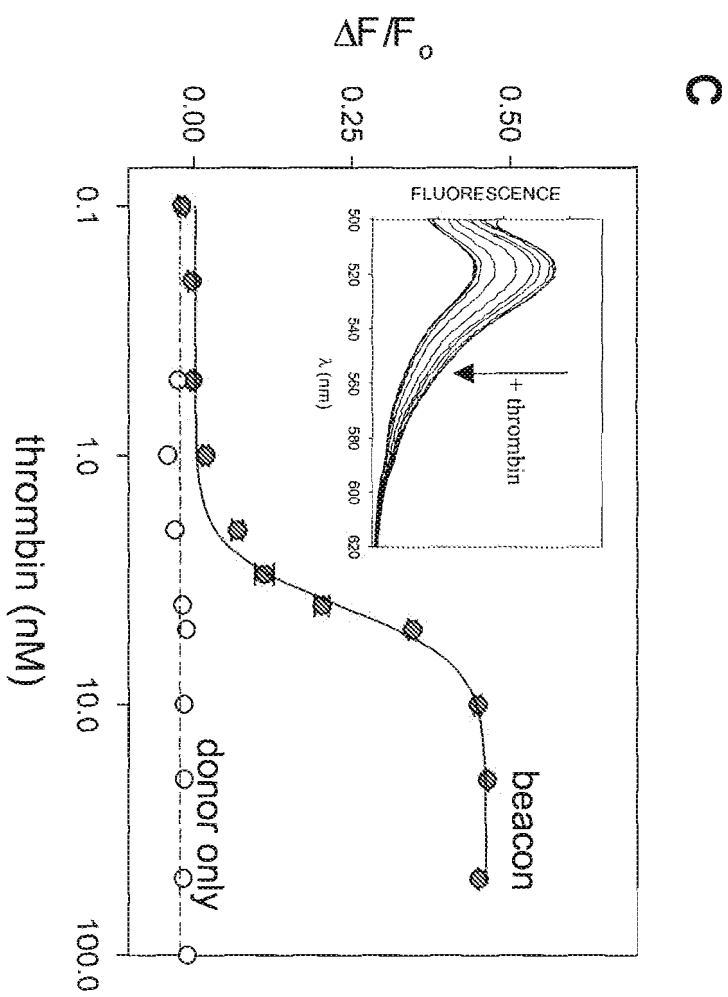
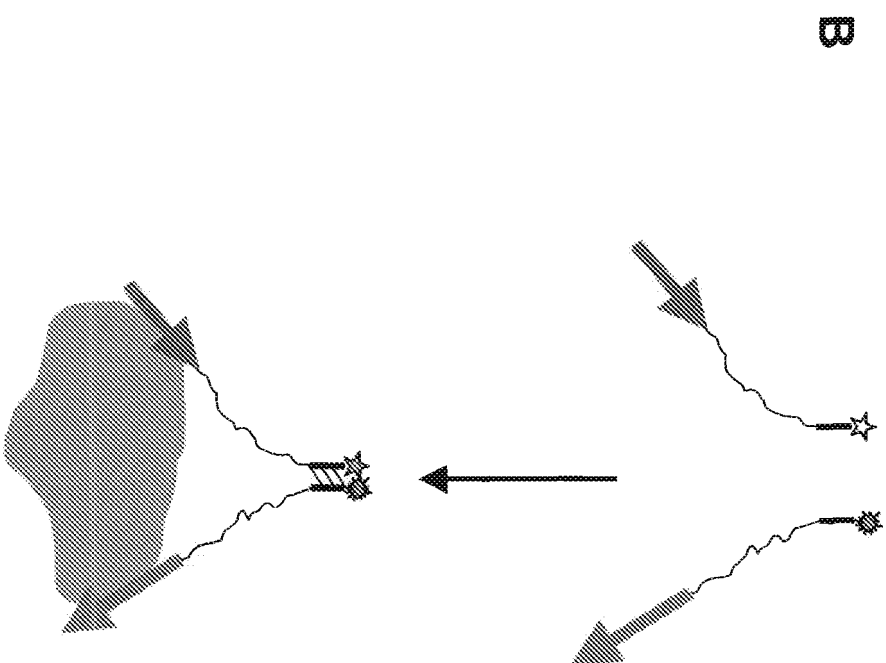
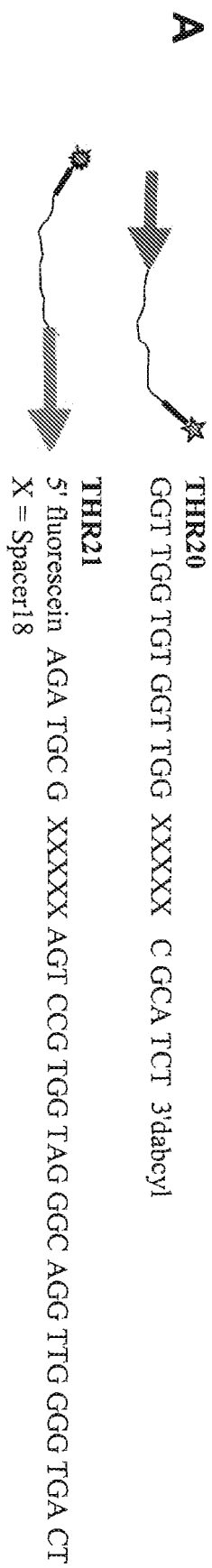
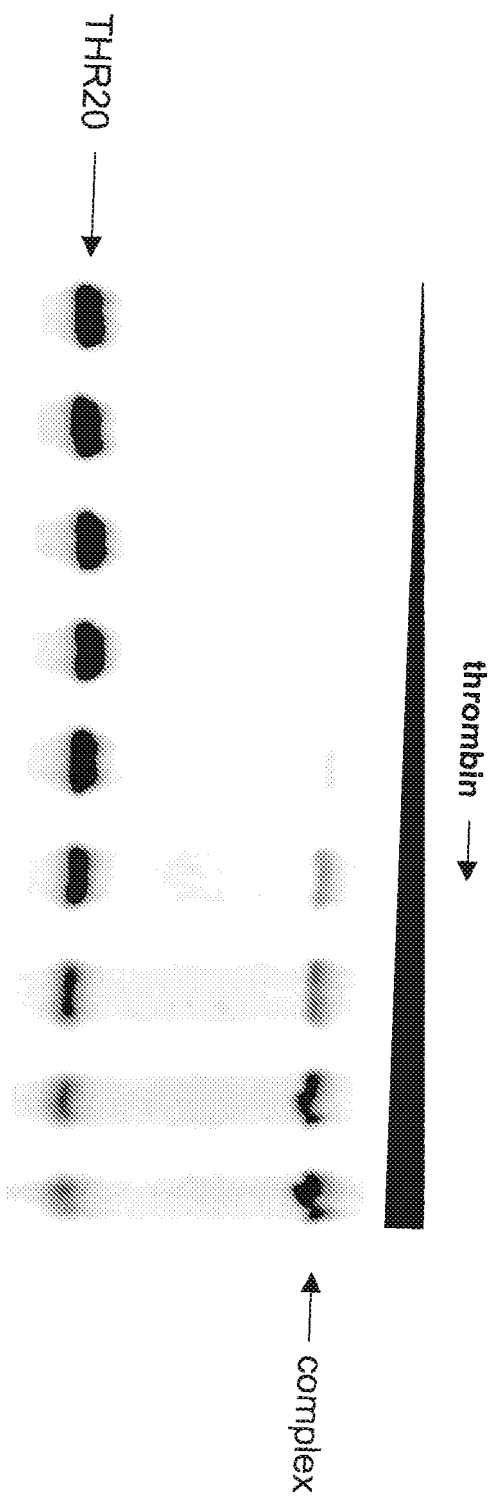


Fig. 14



Figs. 15A-15B

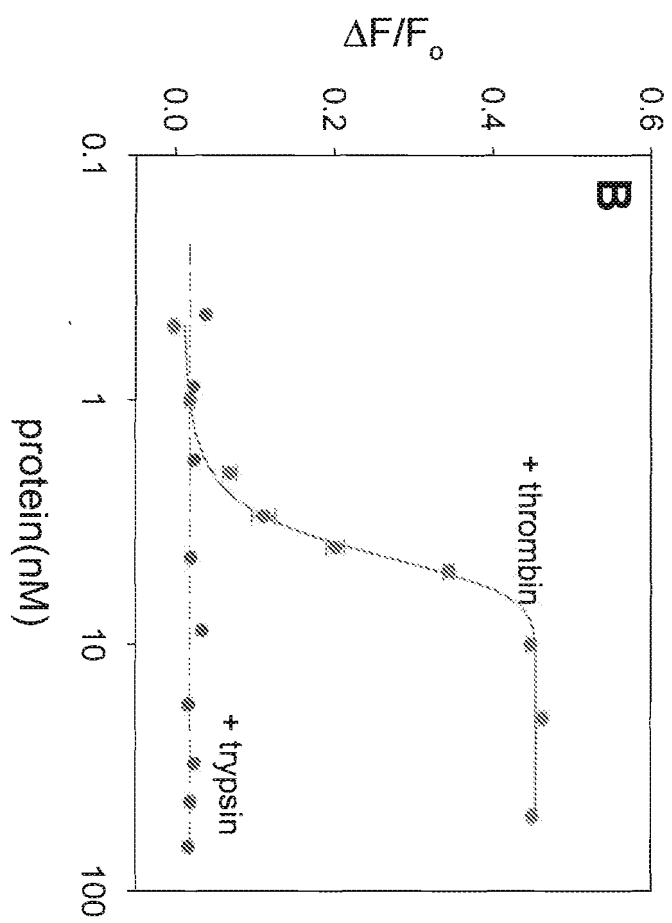
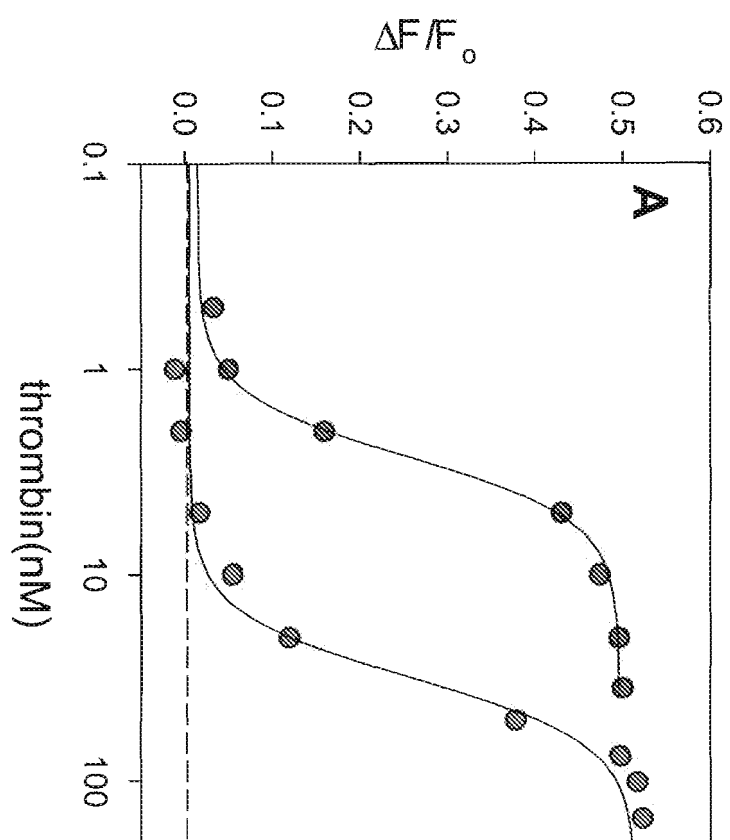
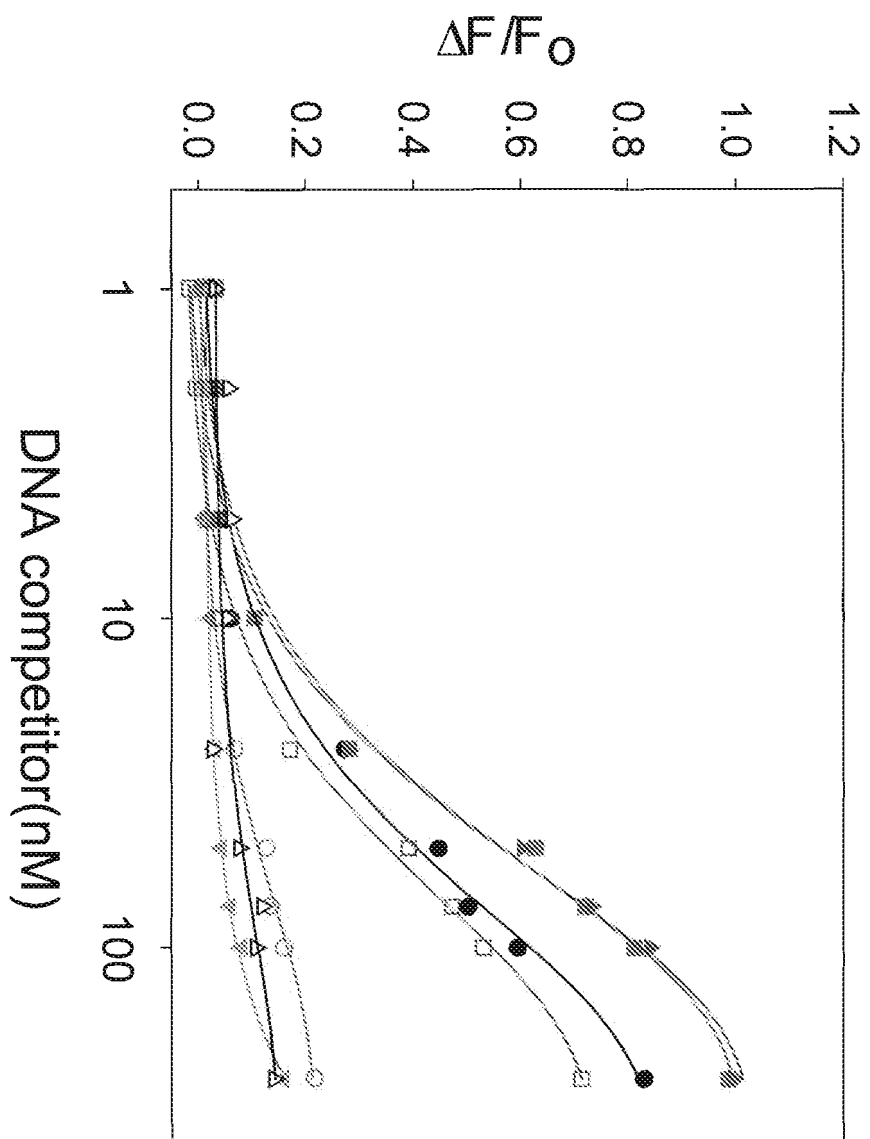
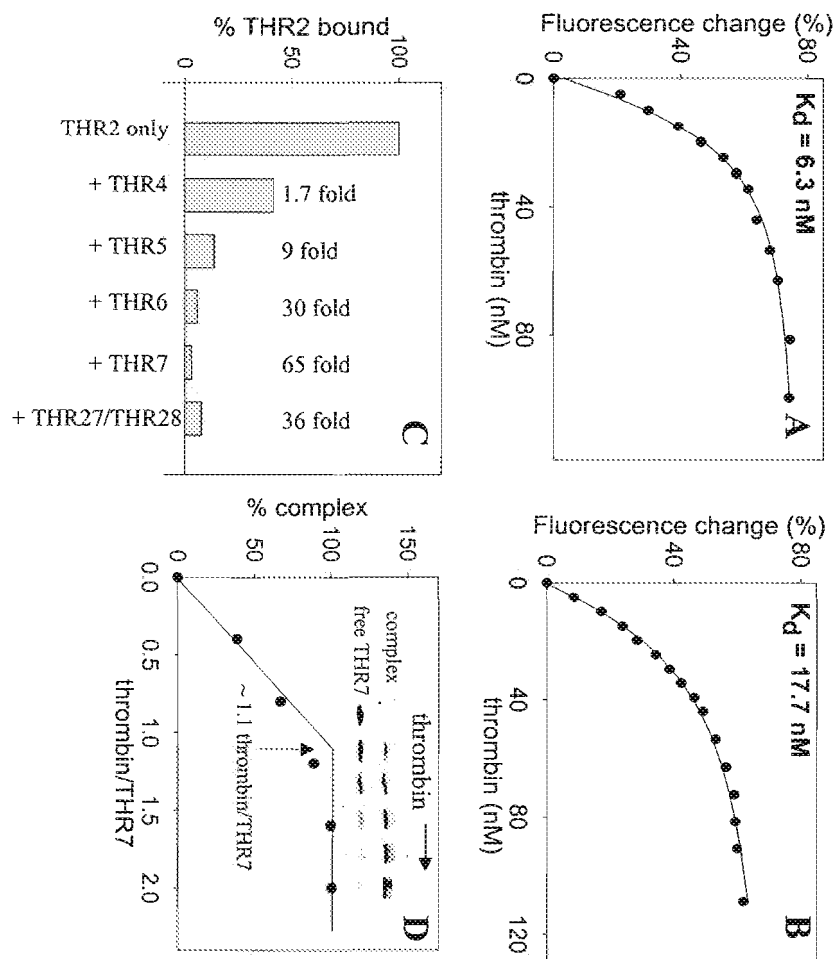


Fig. 16

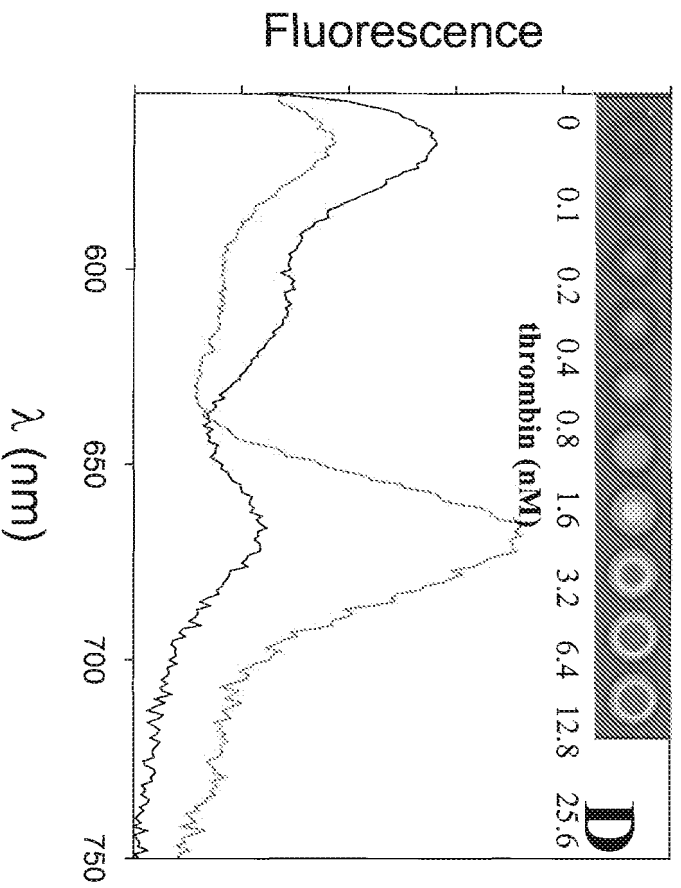
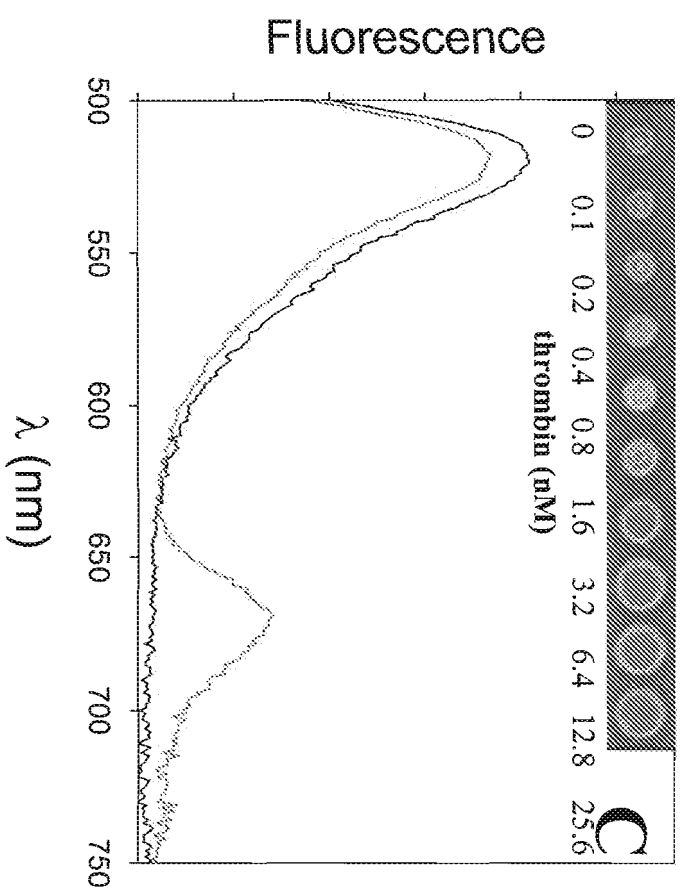
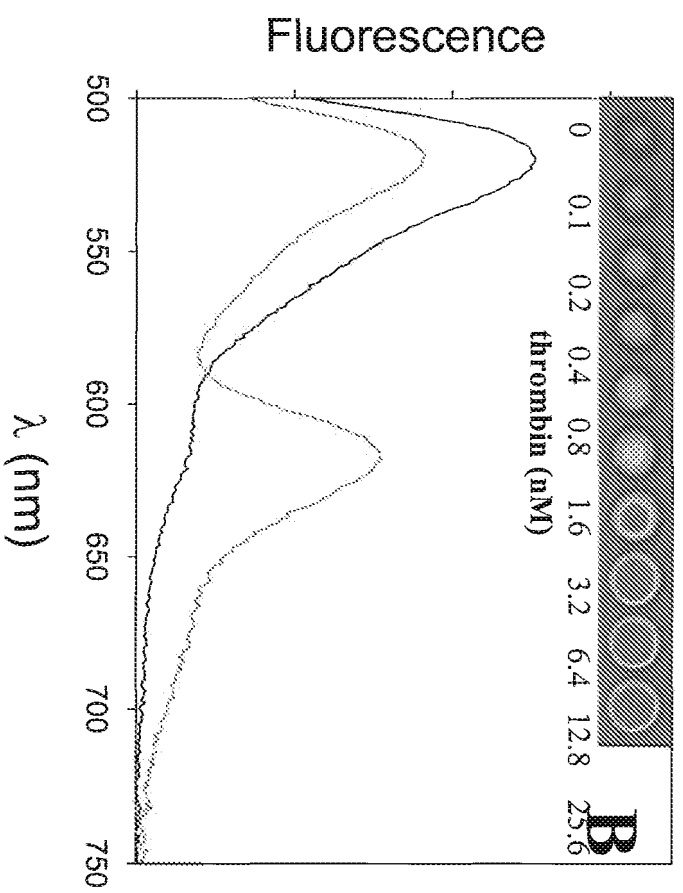
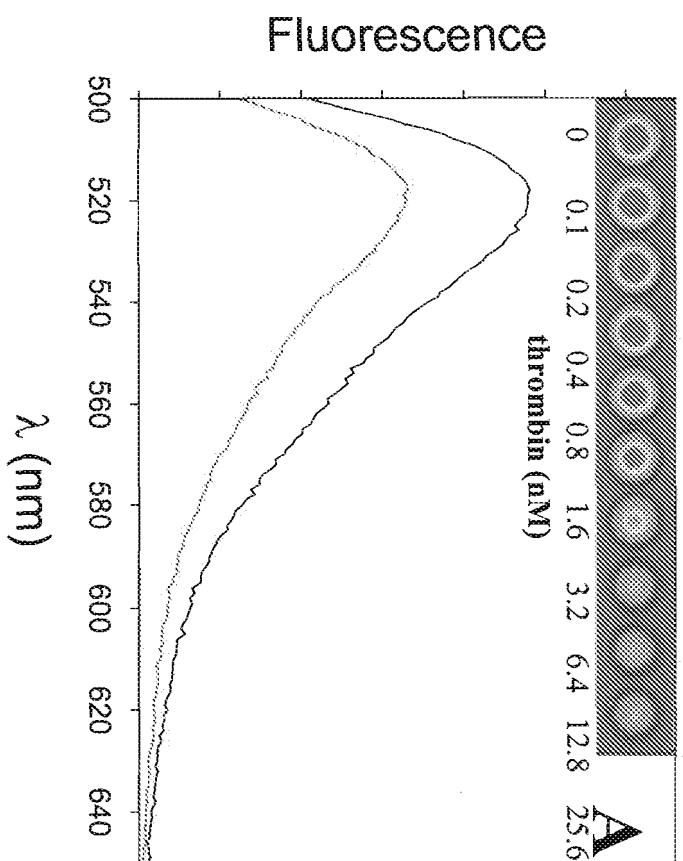


Figs. 17A-17D



Figs. 18A-18D

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Figs. 19A-19F

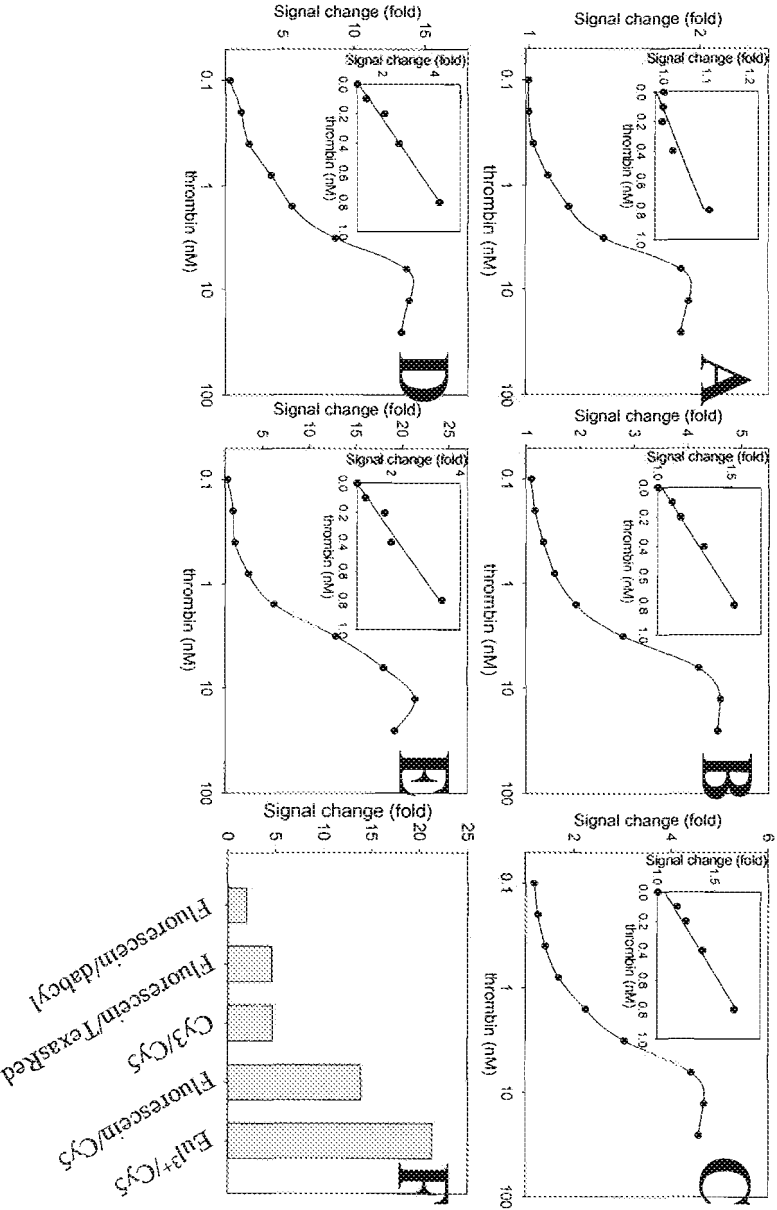
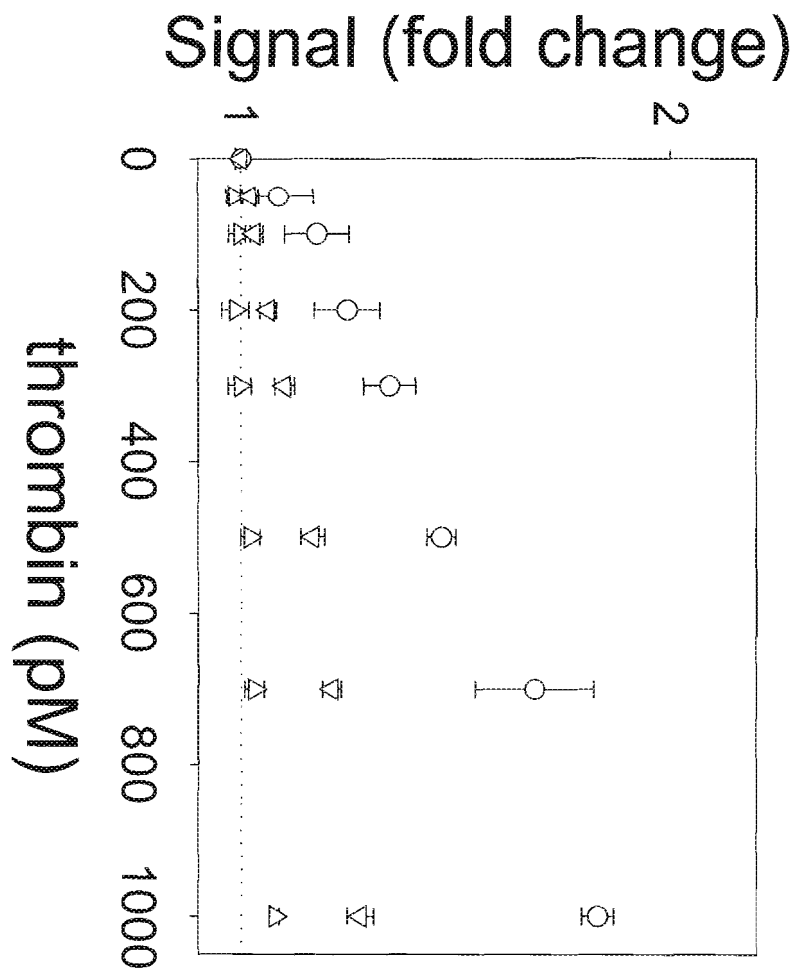


Fig. 20



Figs. 21A-21B

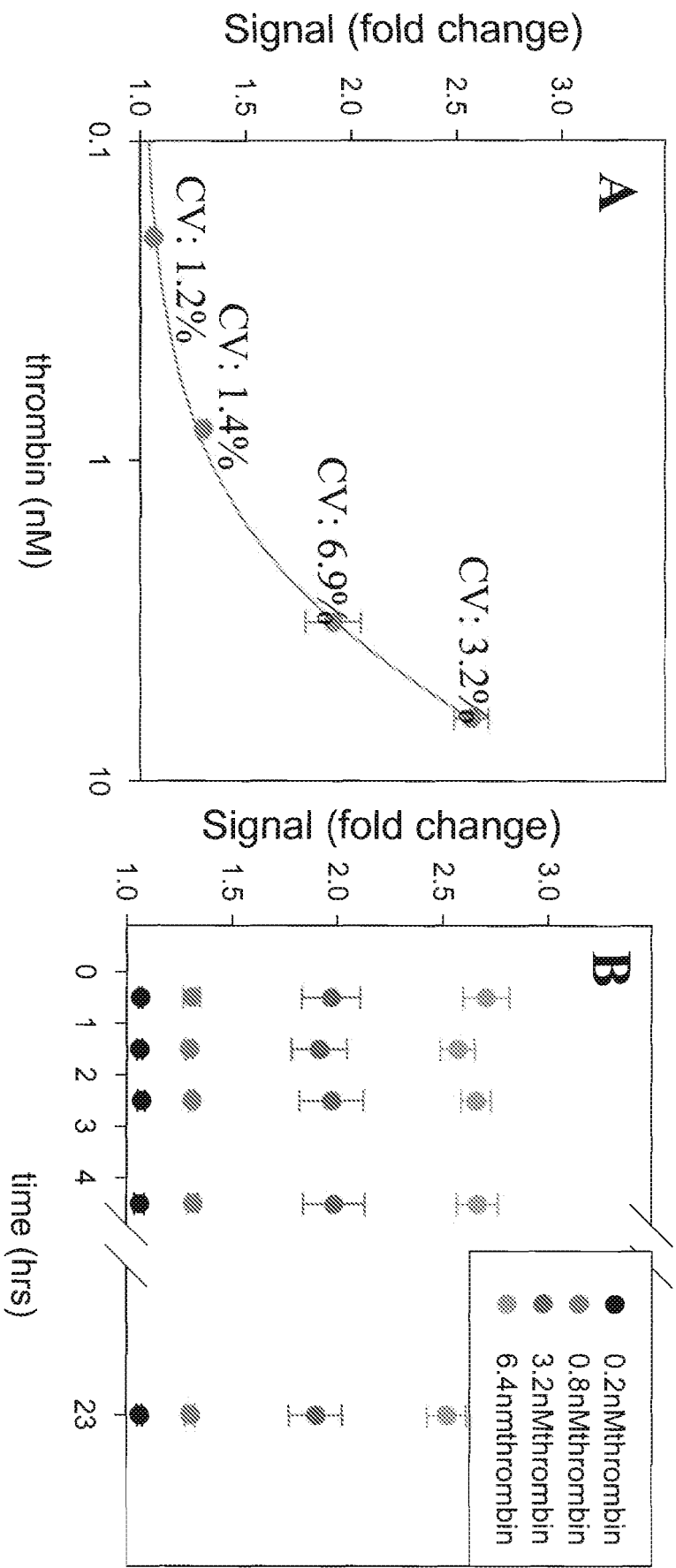
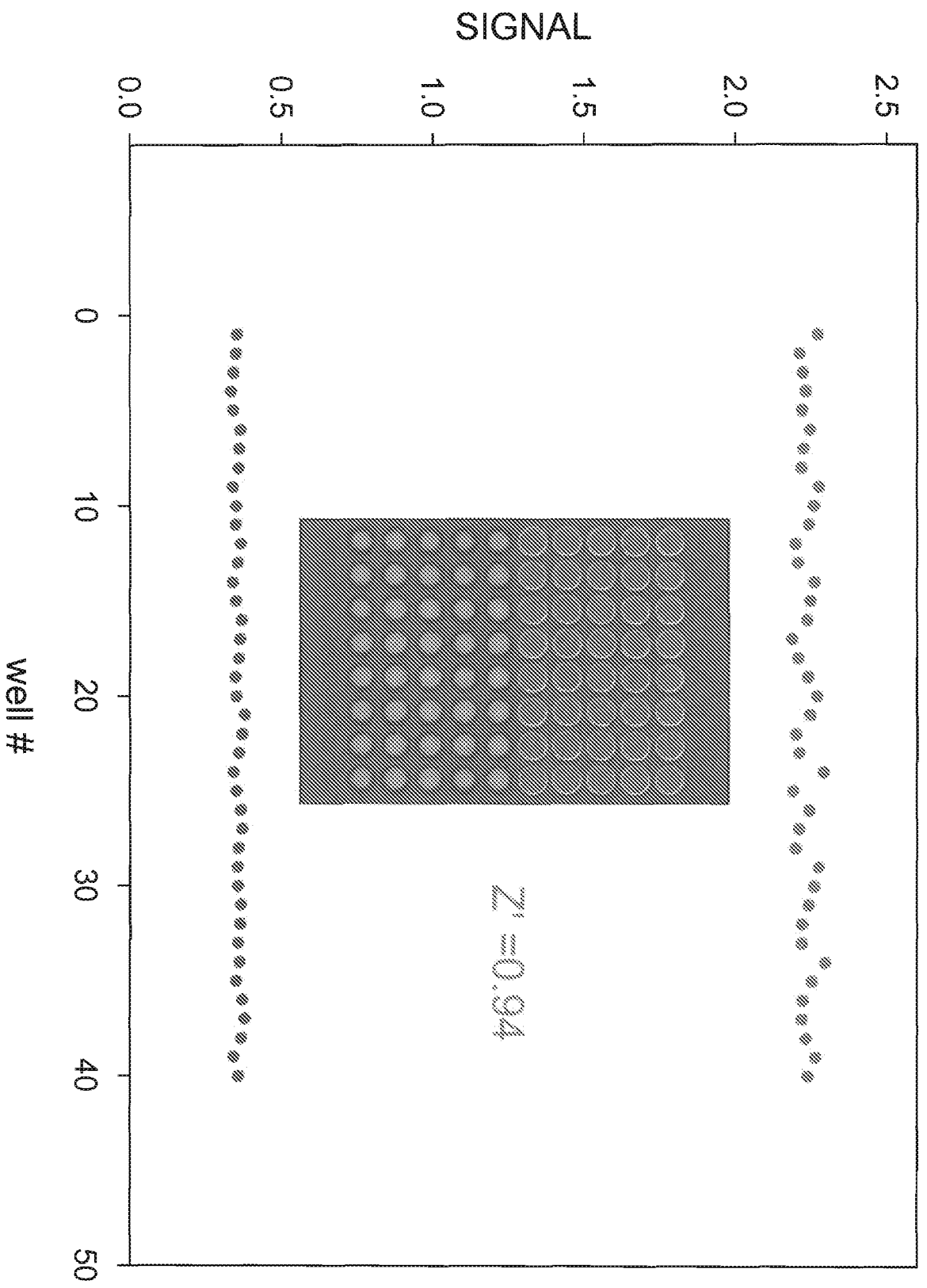
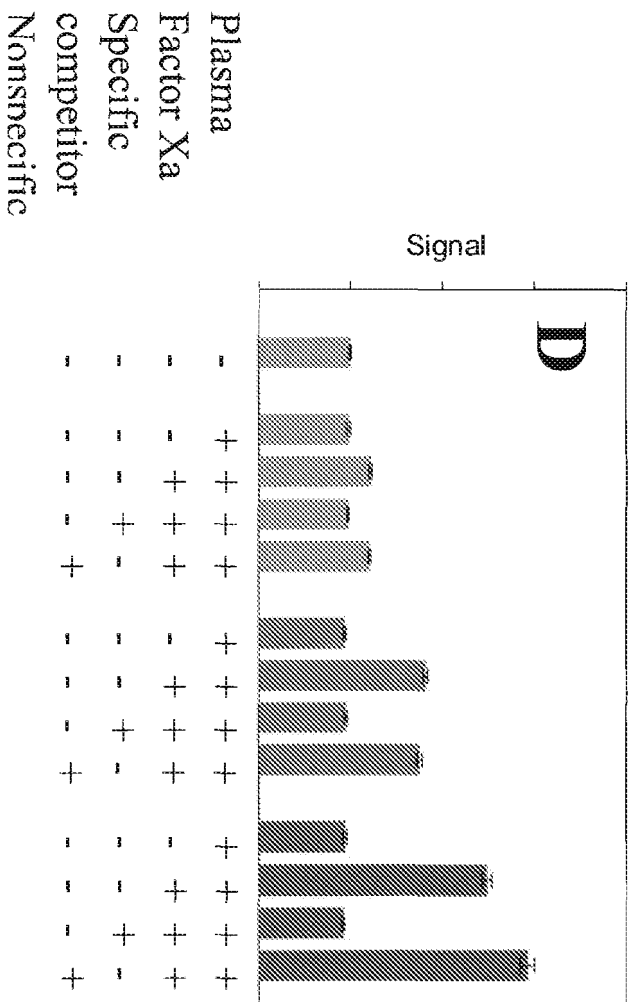
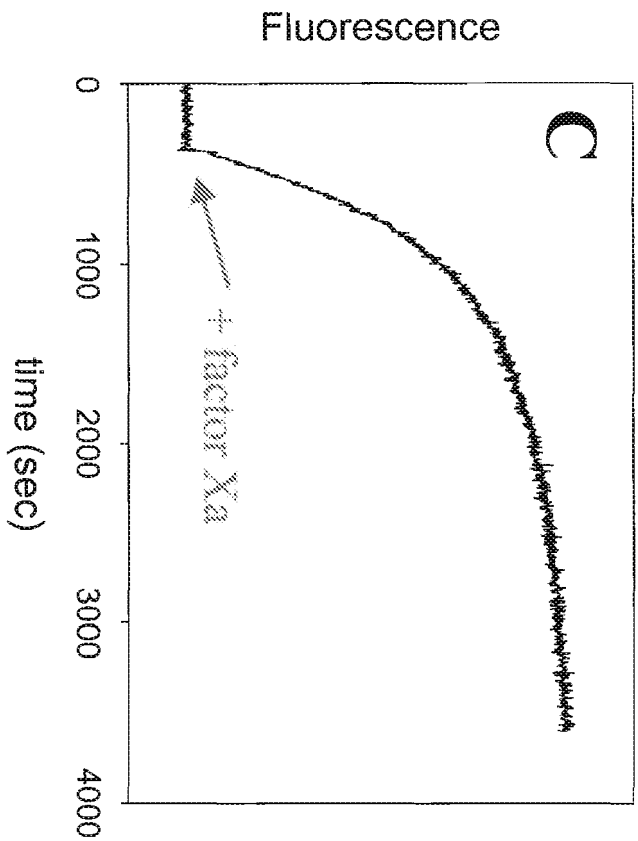
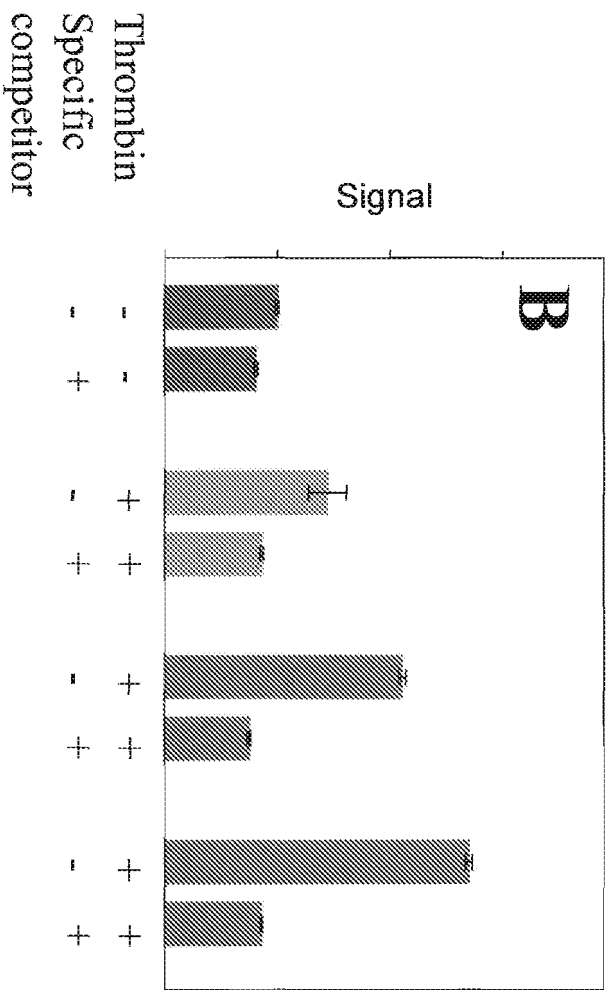
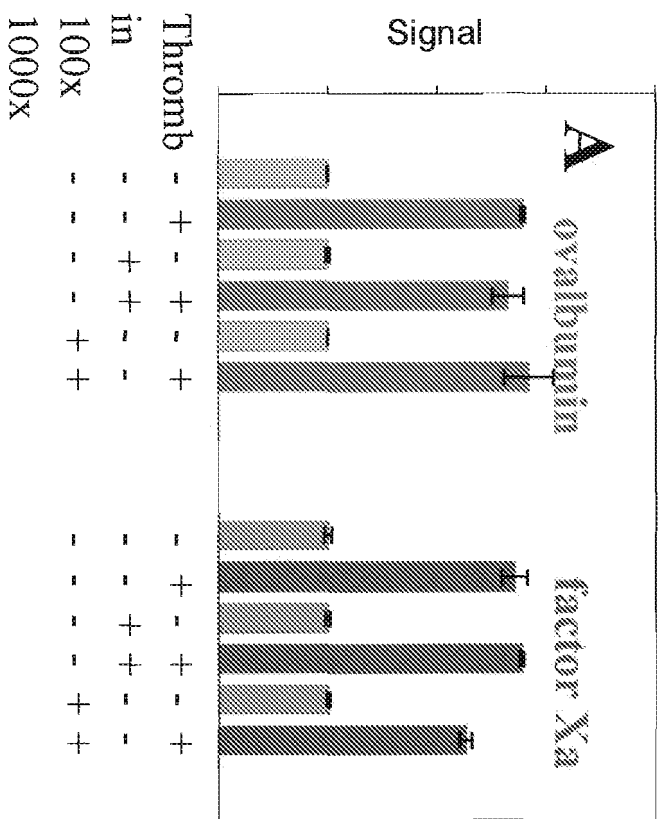
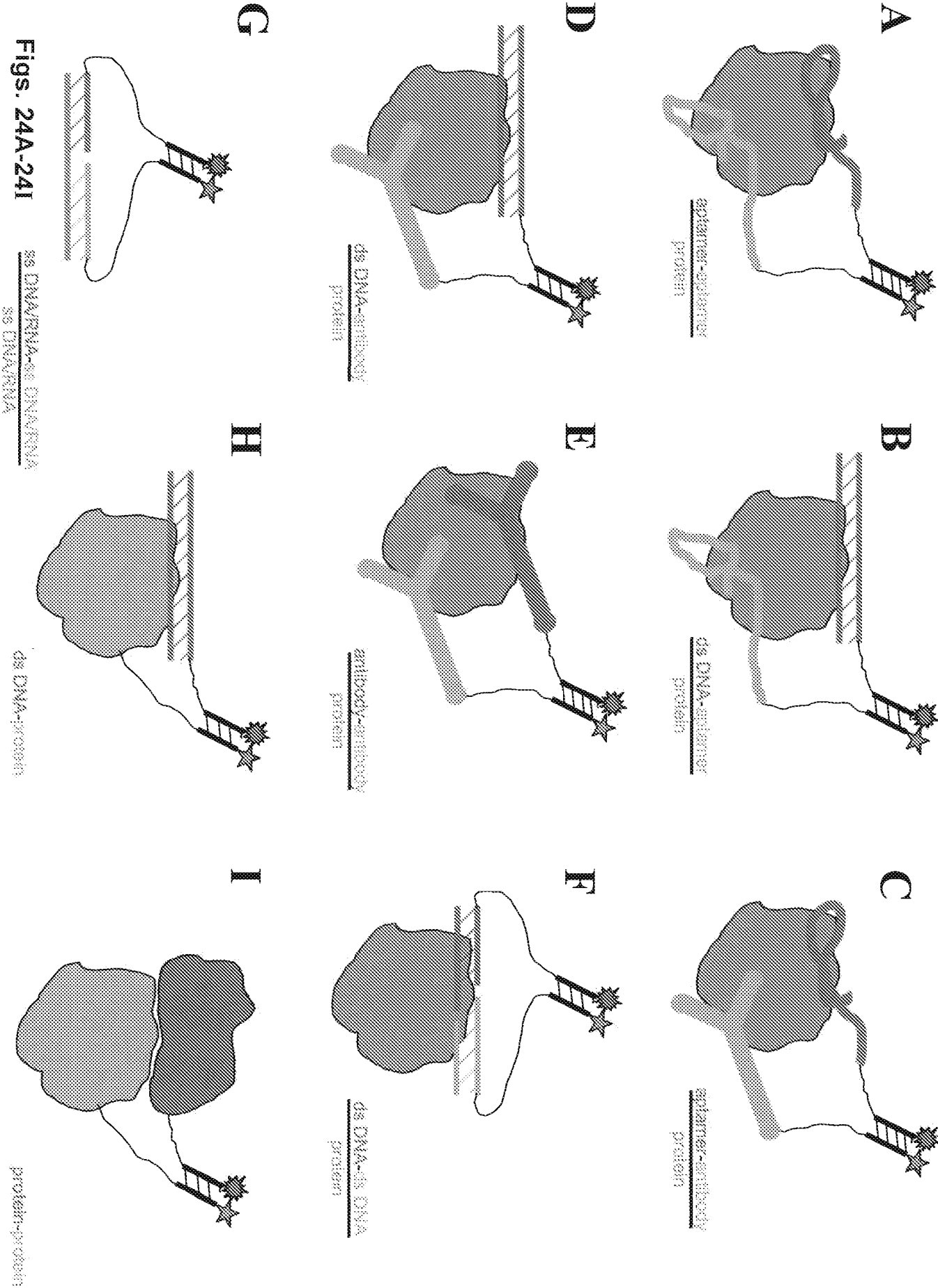


Fig. 22



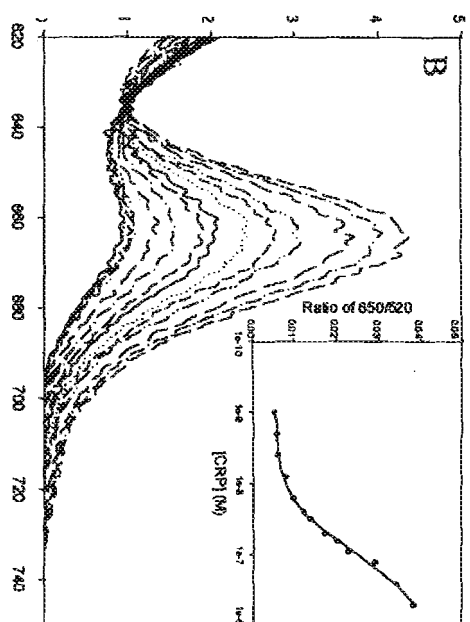
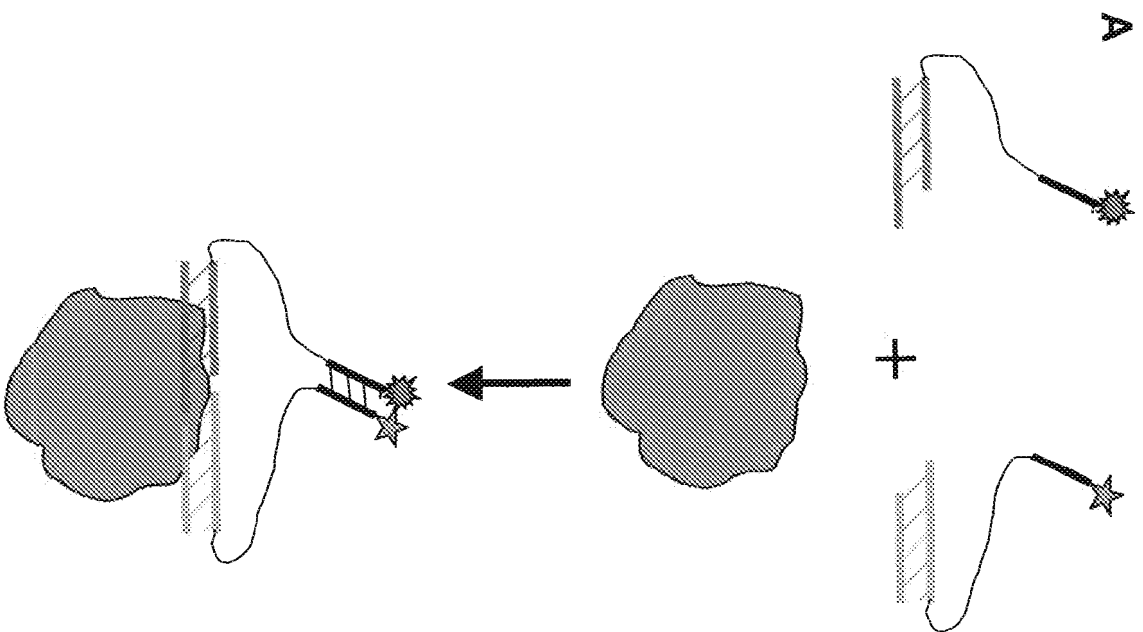
Figs. 23A-23D



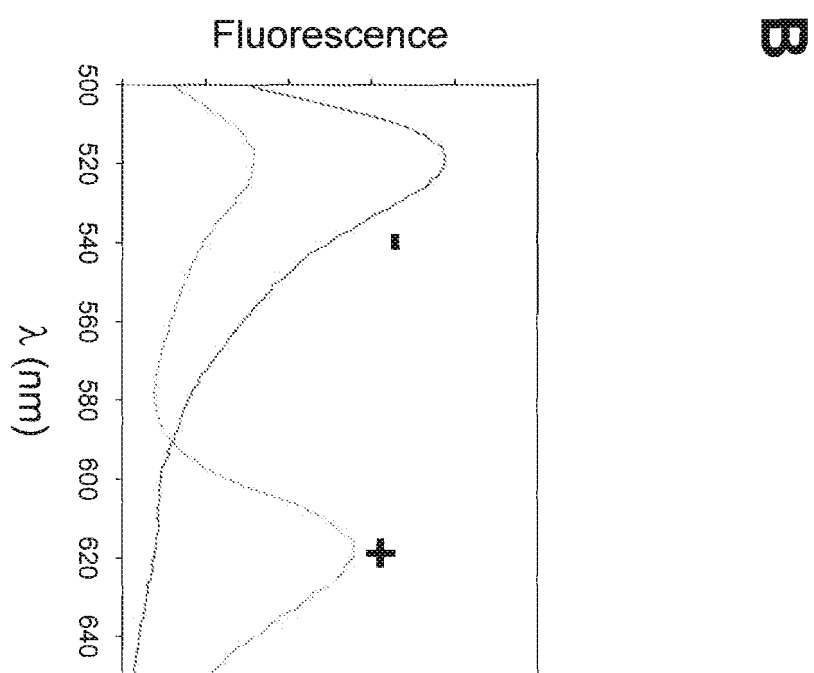
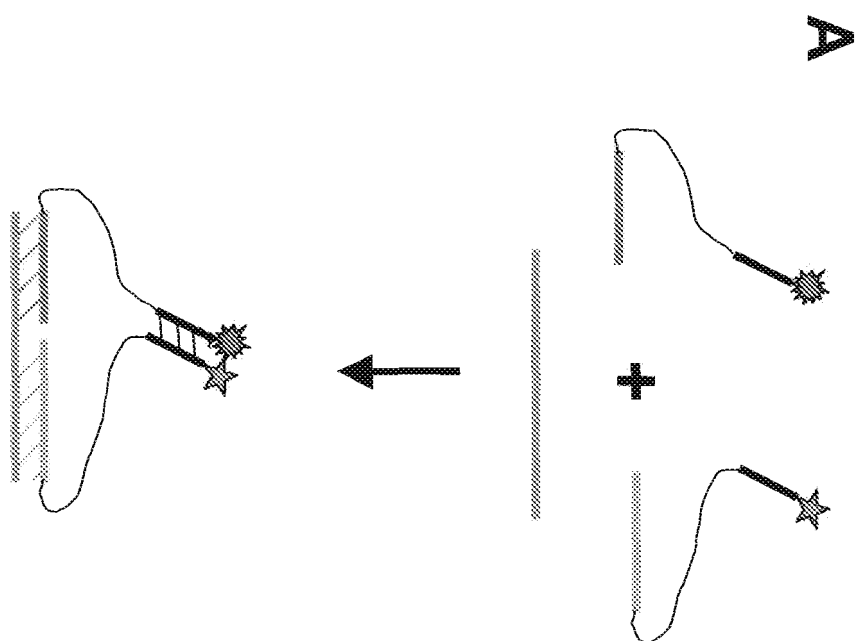


Figs. 24A-24I

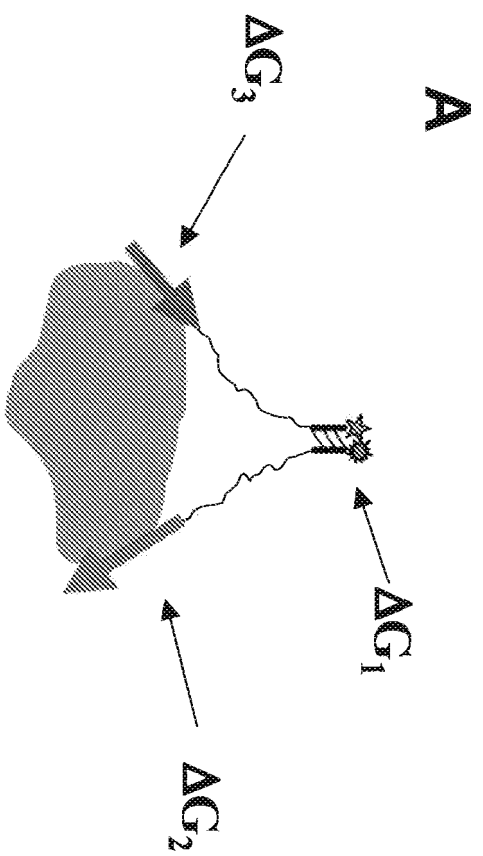
Figs. 25A-25B



Figs. 26A-26B

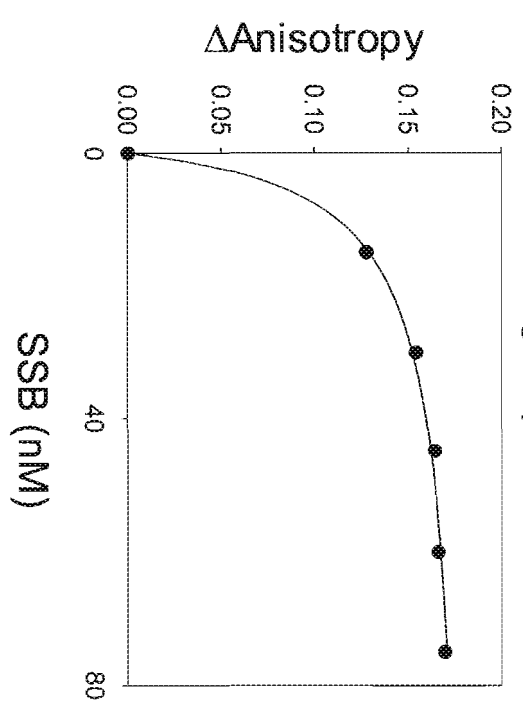


Figs. 27A-27C



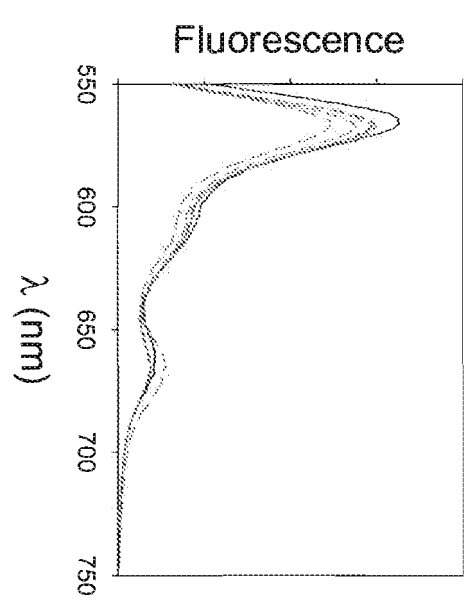
B

Nonspecific binding to single aptamer



C

No signal with the beacon





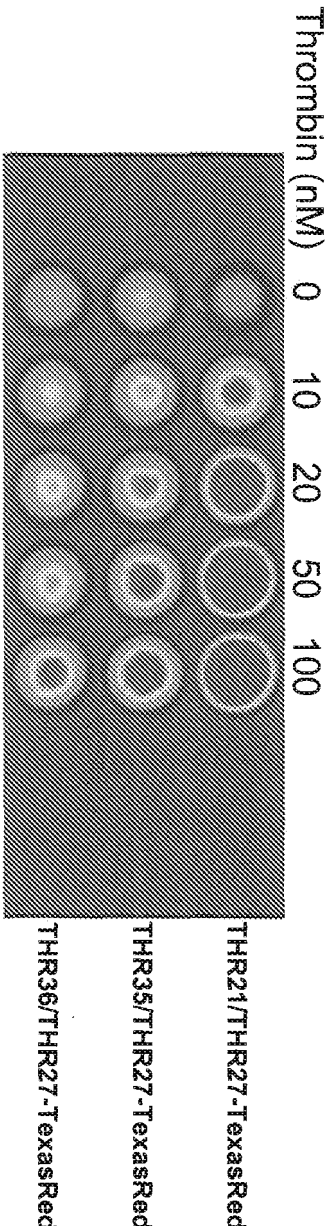
clone1	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone9	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone7	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone12	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone2	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone3	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone4	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone8	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone23	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone22	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone11	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone32	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone33	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone29	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone31	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone5	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone6	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone35	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone10	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone34	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone20	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone21	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone24	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone26	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone13	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone15	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone16	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone19	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone25	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone17	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone14	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone27	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone28	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone30	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
clone18	GGGGGCTGGGACATGCGGTAATGGGAGGTTGGG	33
ruler	1.....10.....20.....30.....40.....50..	

Figs. 29A-29B

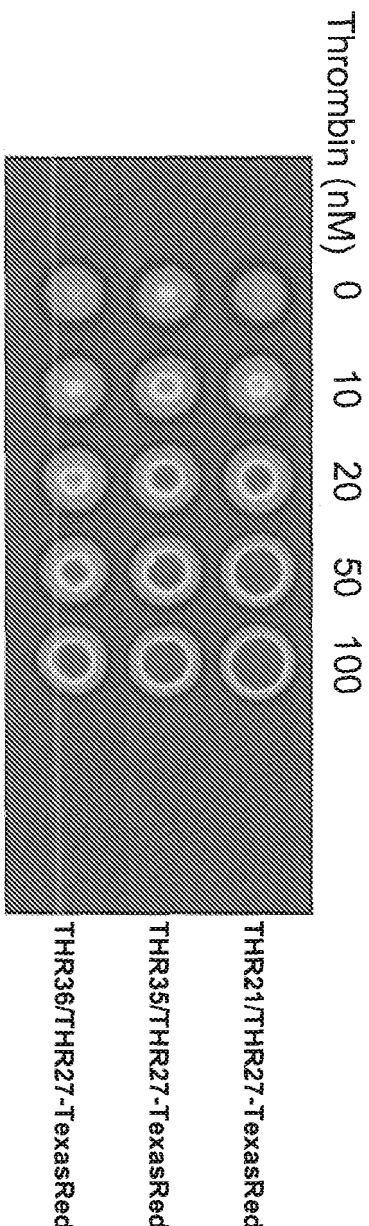
clones 20,21,24,26

5'fluoresceinAGATGGCCXXXXXAGGTTGGGGTACTACGTATCAATGGGTATGGCGGTGGTGTAAACGC
5'fluoresceinAGATGGCGXXXXXAGTGAAGGTGGGGTACTACGTATCAATGGGTATGGCGGTGGTGTAAACGCCATAT

A

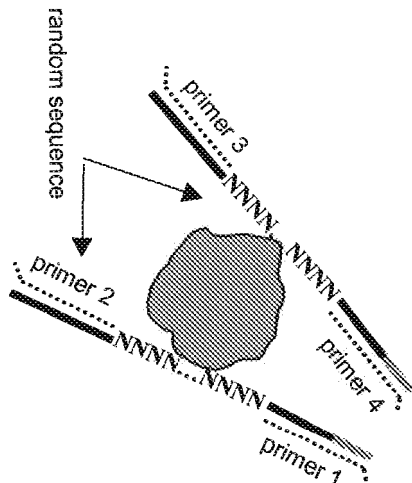


B

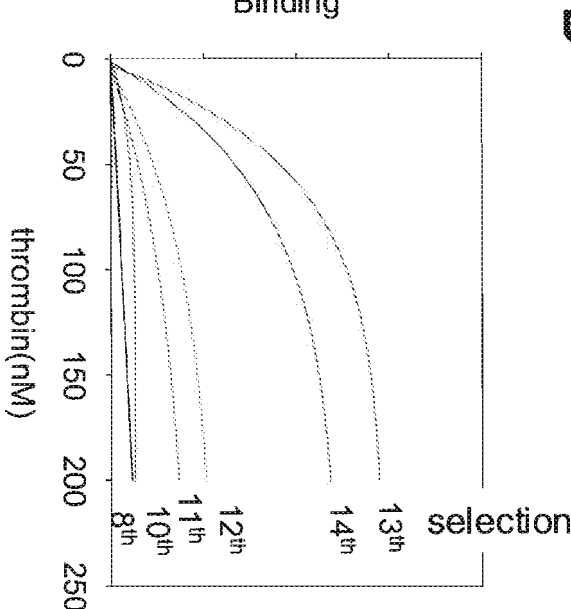


Figs. 30A-30C

A



B

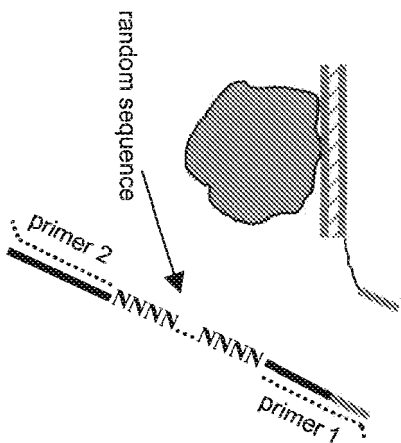


C

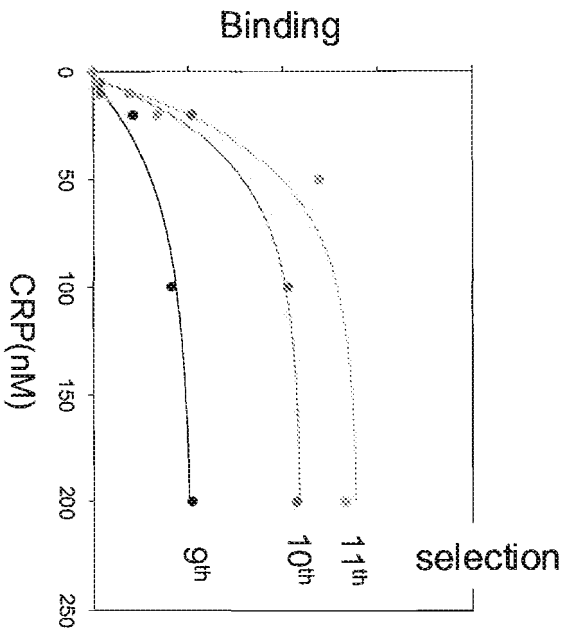
```
clone1-1  --GGGTAGGGTGGTGGTAATAGGG--ATTGGCAT-----30
clone1-2  --GGGTAGGGTGGTGGTAATAGGG--ATTGGCAT-----30
clone1-4  --GGGTAGGGTGGTGGTAATAGGG--ATTGGCAT-----30
clone1-5  --GGGTAGGGTGGTGGTAATAGGG--ATTGGCAT-----30
clone1-9  --GGGTAGGGTGGTGGTAATAGGG--ATTGGCAT-----30
clone2-4  --GGTAGGGTGGTAAATATAGGGGATGGCAG--30
clone2-7  --GGTAGGGTGGTAAATATAGGGGATGGCAG--30
clone2-10 --GGTAGGGTGGTAAATATAGGGGATGGCAG--30
clone2-8  --TAGGATGGGTAGGGTGGTCCCAAGGATGGC--30
clone2-9  --TAGGATGGGTAGGGTGGTCCCAAGGATGGC--30
clone2-12 --TAGGATGGGTAGGGTGGTCCCAAGGATGGC--30
clone2-14 --TAGGATGGGTAGGGTGGTCCCAAGGATGGC--30
clone1-8  --ACGGGTAGGATGGGTAGGGTGGTCCGCTTA-----30
clone2-2  --TAGGATGGGTAGGGTGGTCAACTATGGGG--30
clone1-7  --AATGGGAGGTGGGTGGCGGAGAGTGGT-----30
clone2-5  --CACAGAGAGGCGAGCGCTGAGCATAGTGC-----30
clone2-13 --GGAGATGCAGGTACTGAGTAGGGAGTGTGC-----30
clone2-3  --GGGTGACTGGTCAAGGAG--ATAGTACGATGC-----30
clone2-11 --GATG--TGGCCAGAAAGCATTAACAGACGTAC-----30
clone2-1  --AAGGCGCCCATCTGGGTCCGACGAGTACCA-----30
clone1-10 --GGGCGAAGGTACGAAAGACGATGCACGTGC-----30
clone1-6  --GGTGTGGGTGG--TTATGTGTGTAAGCGGGT-----30
clone1-3  --GGCACAACCCGATATGCTATAGAACTGAGCC-----30
clone2-6  --CCATCGACACATAGGTTACAGCCGCTTGC-----30
ruler 1.....10.....20.....30.....40
```

Figs. 31A-31C

A



B

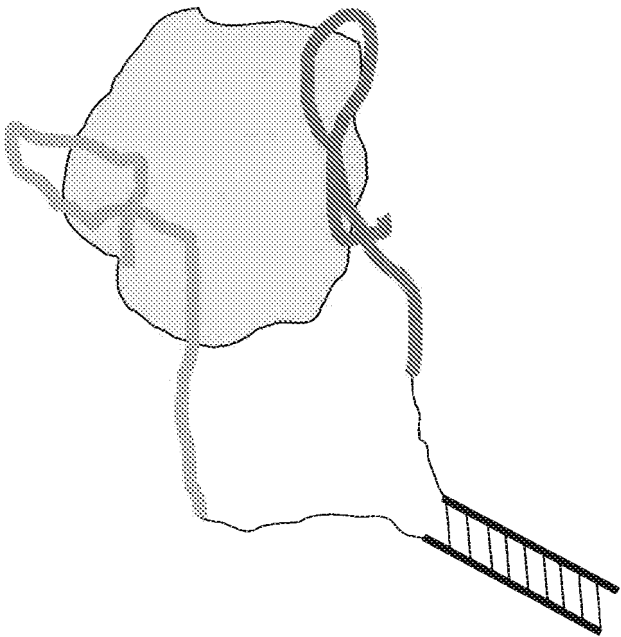


C

```
clone1  ATGCAAGGCGCGGCTGTTAAAGGATGATCTGATGAG----- 33
clone23  -----GAGGATTAAGGCACTCACTAAGATTAAGGCGATGAG----- 33
clone3  -----AAAGGCACTCACTAAGATTAAGGCGCGGATCTGAG----- 33
clone17  -----ACAAAGGCACTCACTG-CAATGCGCGAAGCGGATCTGAG----- 33
clone15  -----CAGGCACTGCGAGAGAGATGTCAGGCGGATCTGAG----- 33
clone7  -----AGGCAATGCGGATCACTG-ACATGCAATCAAGATTA----- 33
clone20  -----AACGCGAATAGGCGATCACTG-ACATGCAATCAAGATTA----- 33
clone5  -----CGAAAGCGGCACTCACTG-ACATGCAATCAAGATTA----- 33
clone10  -----ACAAAGGCGCGCGGCTGAGTAAAGGCAATCAAGATTA----- 33
clone13  -----CCAAATTAAGGCACTCAAGGCGTAACTCAAGATTAAGAG----- 33
clone2  -----AAAGGCAATGCGATCACTCAAGAGAGATGCGATGAG----- 33
clone6  -----CAAGCGAGAGGCGATCACTCAAGAGAGATGAGAGAGAG----- 33
clone9  -----CGAACAGAGCGGTAAGGCAAGGCACTGATCTCTAG----- 33
clone16  -----CAACAGAGAG-AGGCGGCACTG-ACAGATCAAGAGAG----- 33
clone21  -----ACGCGCGGCAAGGCAATGAGTAAAGGCGAGAGAGAG----- 33
clone4  -----GAGGATGAGGCAAGGCAATGAGTAAAGGCGAGAGAGAG----- 33
clone22  -----AGGCGGATTAAGGCAATGAGTAAAGGCGAGAGAGAG----- 33
clone8  -----ATTAAGAGCGA-ACAAAGGCAATGAGTAAAGGCGAGAGAG----- 33
clone14  -----GCAGAGAAAGGCAAGGCAATGAGTAAAGGCGAGAGAG----- 33
clone18  -----ACCGCAAGCAAGGCAATGAGTAAAGGCGAGAGAGAG----- 33
clone12  -----ATAGGCGCAAGGCAAGGCAATGAGTAAAGGCGAGAGAG----- 33
clone19  -----CGAGGATGCGGTAAGGCAAGGCAATGAGTAAAGGCGAGAG----- 33
clone11  -----ATAGGCACTGCGGCAAGGCAATGAGTAAAGGCGAGAGAG----- 33
ruler 1.....10.....20.....30.....40.....50.. 33
```

Figs. 32A-32B

A



B

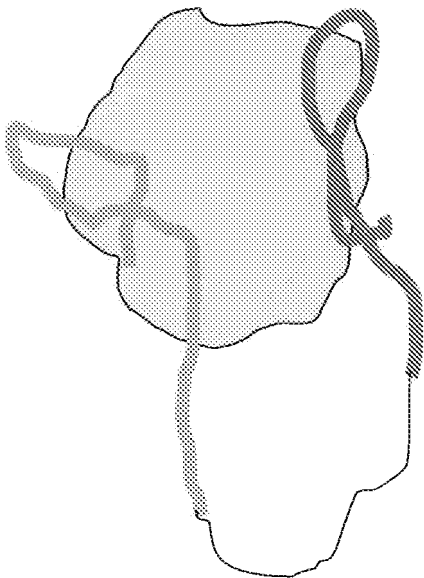


Fig 33

